SWAMP
Surface Water Ambient Monitoring Program

CALIFORNIA Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

Now with Bonus Content

SHORT COURSE:

Implementing Web-based Digital Technologies for Volunteer Monitoring, Watershed Stewardship Organizations & Agencies

NWQMC

8th National Monitoring Conference
April 30 - May 4, 2012 • Portland, Oregon

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Citizen Monitoring Coordinator
CWQMCN Facilitator
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Course Schedule 5-1-2012

8:00 am

Introductions 15 min

8:15 – 9:15 am

Session I -E. Burres 60 min

9:16 – 9:30am

Break 15 min

9:31 – 10:00 am

Session II – E. Burres 30 min

10:01 – 10:30am

Session III – A. Hughes 30 min

Why Investigate New Emerging Digital Technologies and Web-Based

- Emerging technologies are making it easier for small organizations to benefit from new digital web-based offering.

- Theses offering can assist administration, planning, monitoring, outreach, volunteer management and fundraising.

- Many of these applications can be used for little cost.

Clean Water Team Activities Using Non-Traditional Web-tools, Tools, Outreach, Education & Instruction to Support Citizen Monitoring

Since its beginning in 1999/2000 the SWRCB's Clean Water Team has been implementing digital technologies.

- Provide easy access to water quality monitoring resources
- Compliment real-time citizen monitoring coordinaor assistance
- Free or low cost to implement
- Facilitates collaboration
- Provides for legacy
- Effective

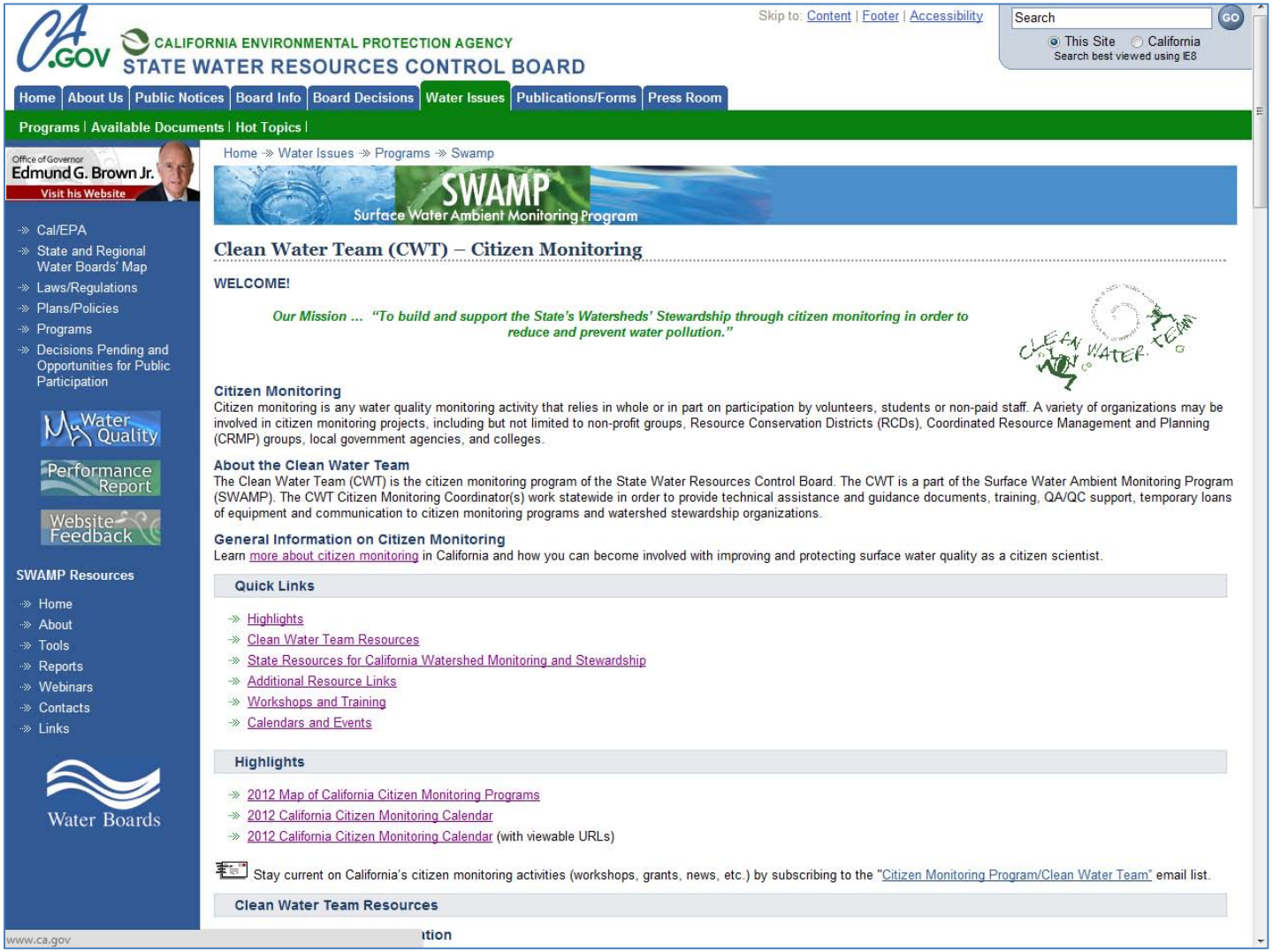
Topics to Be Covered

- Blogs
- Cloud-based Virtual Desktops…
- Digital Storage
- Polls
- Data Display, Sharing & Transforming Data to Information
- Data Sources
- eMail
- Event Planning
- Fund Raising
- Mapping
- Mobile Solutions
- Modified URLs
- Picture/Image Sharing
- QR Codes
- Social Media: Facebook, LinkedIn, Twitter….
- Sound Sharing and Creation
- Video Creation, Collaboration, and Presentation
- Web-Tools: EMMA, StreamStats…
- Webinars
- Websites (Desktop, Mobile)

- More…..

Desktop Internet Access

- Text Rich
- Provides a platform for many different uses
- Very visible on large monitors
- Diversity of platforms and hosting options.



www.waterboards.ca.gov/water_issues/programs/swamp/cwt_volunteer.shtml

Mobile Internet Access

Websites Optimized for Mobile Devices

- Less Text
- Simple Graphics
- Simple Purpose Driven Webpages
- Application Uses

Over one-quarter of smartphone users, use their device as the **primary way they access the Internet**.

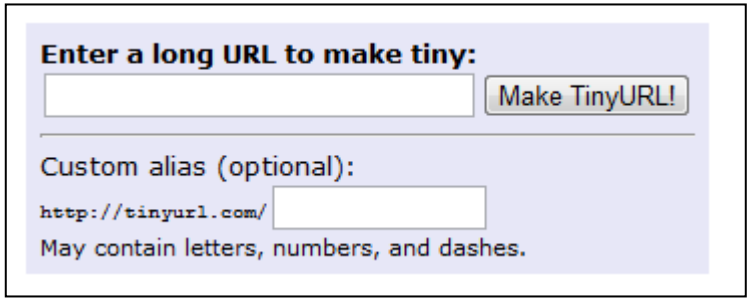
- **1.6 billion –** Number of mobile devices sold to end users in 2010, an increase of almost 32% compared to the year before.
- **982 million –** Estimated number of smartphones to be sold in 2015.
- **80% –** The share of devices accessing mobile websites that have a touchscreen

Modified URLs

ORIGINAL:

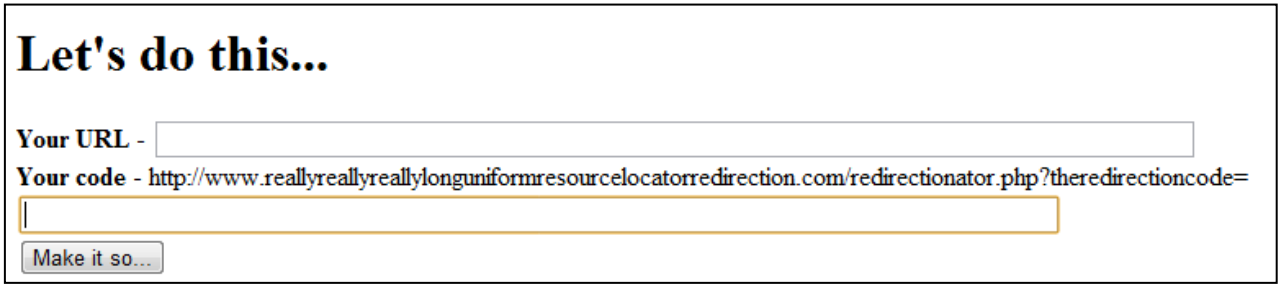
http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/cwt/guidance/112b.pdf

SHORTENED:



http://tinyurl.com/

LENGTHENED:



www.reallyreallyreallylonguniformresourcelocatorredirection.com

Quick Response Code (QR Codes)

QR Codes are one of the most popular types of two-dimensional barcode/matrix barcode. Smart phones equipped with a scanner/reader (camera, app) find quick access to web content.

CONTENT TYPES

- Website URL
- YouTube Video
- Google Maps Location
- Twitter
- Facebook
- LinkedIn
- FourSquare
- iTunes Link
- Plain Text
- Telephone Number
- Skype Call
- SMS Message
- Email Address
- Email Message
- Contact Details (VCARD)
- Event (VCALENDAR)
- Wifi Login (Android Only)
- Paypal Buy Now Link
- And more….

Quick Response Code (QR Codes)

QR Codes are one of the most popular types of two-dimensional barcode/matrix barcode. Smart phones equipped with a scanner/reader (camera, app) find quick access to web content. (*Free* QR Generator websites can be easily found on the internet.)

QR Code

Color

Logo

Branded QR Code

Tip: QR codes can tolerate up to a 30% error (that's why one with an image can still function ok).

E-Mail

- Variety of Providers (Free and fee based)
- Address Books (User maintained)
- Listserves (Subscriber maintained)
- Services (Marketing, newsletters…)

Listserve:

Stay current on California's citizen monitoring activities

(workshops, grants, news, etc.) by subscribing to the "Citizen Monitoring Program/Clean Water Team" email list.

Personnel:

Contact the Clean Water Team by email: CWTmail@waterboards.ca.gov

Online Resources- Read/Download

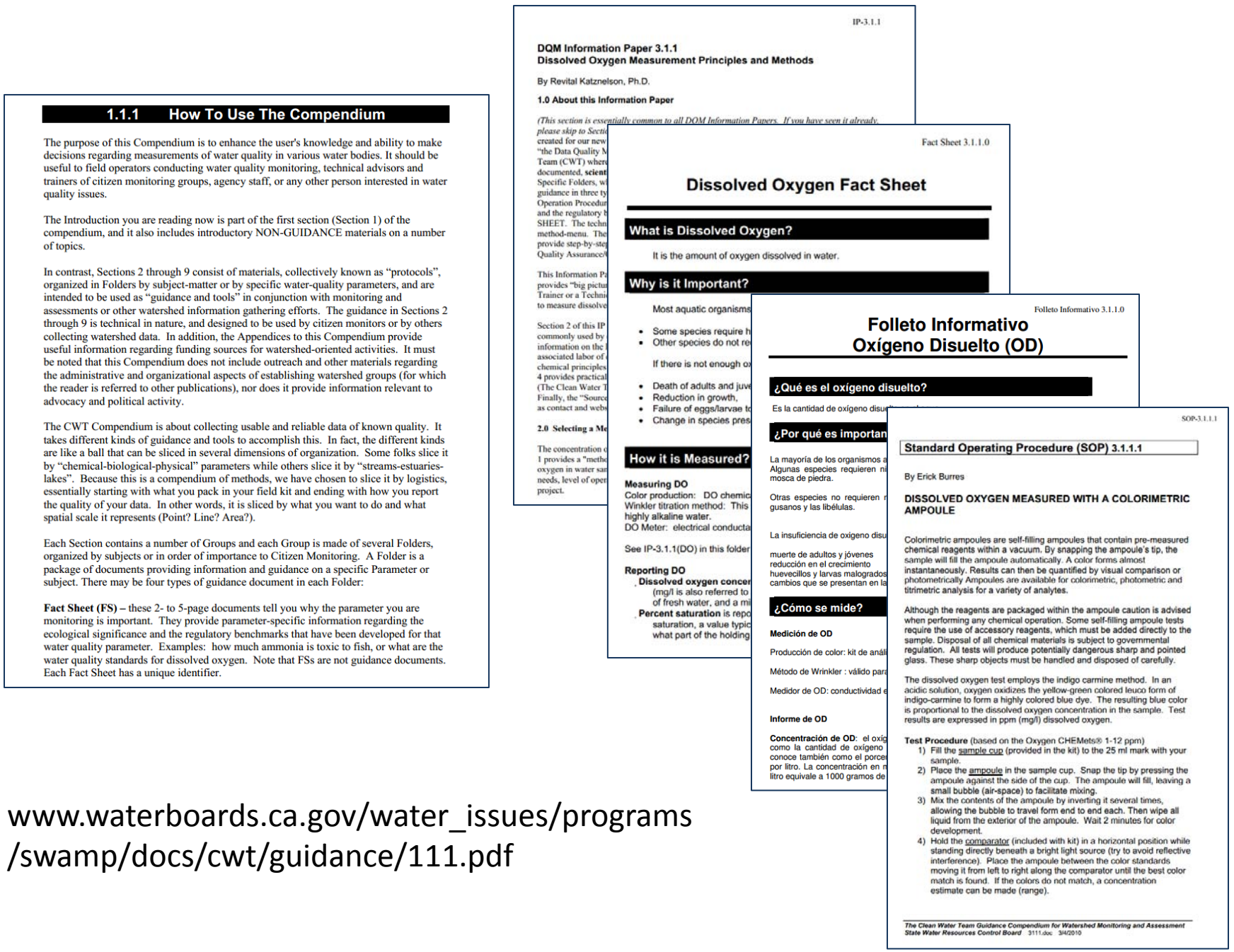
1/2

GUIDANCE COMPENDIUM FOR WATERSHED MONITORING AND ASSESSMENT

www.waterboards.ca.gov/water_issues/programs/swamp/cwt_guidance.shtml

Section 1.0 - Introduction and Overview

1.1	Introduction			
	1.1.1	How to Use the Compendium (Information Paper about this set of 'how-to' manuals)		
	1.1.2	Regulatory Framework: Water and Environmental Legislation		
		1.1.2a	Introduction to the Clean Water Act	
			1.1.2.a.1	Watershed Watchdog - Citizen Useage of the Clean Water Act
		1.1.2b	Introduction to the Waterboards	
		1.1.2c	Primer on Stream and River Protection	
	1.1.3	The Universe of Citizen Monitoring		
		1.1.3.1	A Volunteer Monitoring Code of Ethics	
		1.1.3.2	Introduction to the Clean Water Team and Citizen Monitoring in California	
		1.1.3.3	Volunteer Monitoring National Facilitation Project [external link]	
		1.1.3.4	Volunteer Monitoring Related Research [external link]	
		1.1.3.5	Volunteer Monitoring in the San Francisco Bay	
		1.1.3.6	Developing Relationships Between Public Agencies and Volunteer Monitors	
		1.1.3.7	Monitoring Consortiums: A Cost Effective Means to Enhance Watershed Data Collection	
		1.1.3.8	Broadening Participation in Biological Monitoring Projects	
		1.1.3.8a	Citizen Bioassessment Monitoring- Successes & Challenges	
		1.1.3.8b	Example of a Citizen Monitoring Bioassessment Program- Friends of Deer Creek	
		1.1.3.8c	Vernal Pool Planning at a Local Level Using Citizen Scientists	
		1.1.3.9	The Role of Citizen Based Monitoring Programs in Creating a Healthy Watershed	
		1.1.3.9a	One Day Snapshot Finds Hotspots	
	1.1.4	Introduction to Data Quality		
		1.1.4a	Sound Science	
		1.1.4.1	What are Good Data?	
		1.1.4.2	The Clean Water Team (CWT) Data Quality Management System	
		1.1.4.3	Basic Concepts in Data Quality	
		1.1.4.4	Data Quality - Tips for getting it, keeping it	
		1.1.4.5	The Mystery of Quality Assurance	
	1.1.5	Watershed Characterization Strategies and Monitoring Goals		
		1.1.5.5a	Watershed Characterization Strategies and Monitoring Goals	
1.2	**Making Citizen Monitoring Happen**			
	1.2a	Beginning a Citizen Monitoring Program		
	1.2b	Getting Started in Volunteer Monitoring		



1.1.1 How To Use The Compendium

The purpose of this Compendium is to enhance the user's knowledge and ability to make decisions regarding measurements of water quality in various water bodies. It should be useful to field operators conducting water quality monitoring, technical advisors and trainers of citizen monitoring groups, agency staff, or any other person interested in water quality issues.

The Introduction you are reading now is part of the first section (Section 1) of the compendium, and it also includes introductory NON-GUIDANCE materials on a number of topics.

In contrast, Sections 2 through 9 consist of materials, collectively known as "protocols", organized in Folders by subject-matter or by specific water-quality parameters, and are intended to be used as "guidance and tools" in conjunction with monitoring and assessments or other watershed information gathering efforts. The guidance in Sections 2 through 9 is technical in nature, and designed to be used by citizen monitors or by others collecting watershed data. In addition, the Appendices to this Compendium provide useful information regarding funding sources for watershed-oriented activities. It must be noted that this Compendium does not include outreach and other materials regarding the administrative and organizational aspects of establishing watershed groups (for which the reader is referred to other publications), nor does it provide information relevant to advocacy and political activity.

The CWT Compendium is about collecting usable and reliable data of known quality. It takes different kinds of guidance and tools to accomplish this. In fact, the different kinds are like a ball that can be sliced in several dimensions of organization. Some folks slice it by "chemical-biological-physical" parameters while others slice it by "streams-estuaries-lakes". Because this is a compendium of methods, we have chosen to slice it by logistics, essentially starting with what you pack in your field kit and ending with how you report the quality of your data. In other words, it is sliced by what you want to do and what spatial scale it represents (Point? Line? Area?).

Each Section contains a number of Groups and each Group is made of several Folders, organized by subjects or in order of importance to Citizen Monitoring. A Folder is a package of documents providing information and guidance on a specific Parameter or subject. There may be four types of guidance document in each Folder:

Fact Sheet (FS) – these 2- to 5-page documents tell you why the parameter you are monitoring is important. They provide parameter-specific information regarding the ecological significance and the regulatory benchmarks that have been developed for that water quality parameter. Examples: how much ammonia is toxic to fish, or what are the water quality standards for dissolved oxygen. Note that FSs are not guidance documents. Each Fact Sheet has a unique identifier.

IP-3.1.1

DQM Information Paper 3.1.1
Dissolved Oxygen Measurement Principles and Methods

By Revital Katznelson, Ph.D.

1.0 About this Information Paper

(This section is essentially common to all DQM Information Papers. If you have seen it already, please skip to Sectio

Fact Sheet 3.1.1.0

Dissolved Oxygen Fact Sheet

What is Dissolved Oxygen?

It is the amount of oxygen dissolved in water.

Why is it Important?

How it is Measured?

Measuring DO

Reporting DO

Folleto Informativo 3.1.1.0

Folleto Informativo
Oxígeno Disuelto (OD)

¿Qué es el oxígeno disuelto?

¿Por qué es importan

¿Cómo se mide?

Medición de OD

Informe de OD

SOP-3.1.1.1

Standard Operating Procedure (SOP) 3.1.1.1

By Erick Burres

DISSOLVED OXYGEN MEASURED WITH A COLORIMETRIC AMPOULE

Colorimetric ampoules are self-filling ampoules that contain pre-measured chemical reagents within a vacuum. By snapping the ampoule's tip, the sample will fill the ampoule automatically. A color forms almost instantaneously. Results can then be quantified by visual comparison or photometrically Ampoules are available for colorimetric, photometric and titrimetric analysis for a variety of analytes.

Although the reagents are packaged within the ampoule caution is advised when performing any chemical operation. Some self-filling ampoule tests require the use of accessory reagents, which must be added directly to the sample. Disposal of all chemical materials is subject to governmental regulation. All tests will produce potentially dangerous sharp and pointed glass. These sharp objects must be handled and disposed of carefully.

The dissolved oxygen test employs the indigo carmine method. In an acidic solution, oxygen oxidizes the yellow-green colored leuco form of indigo-carmine to form a highly colored blue dye. The resulting blue color is proportional to the dissolved oxygen concentration in the sample. Test results are expressed in ppm (mg/l) dissolved oxygen.

Test Procedure (based on the Oxygen CHEMets® 1-12 ppm)

1) Fill the sample cup (provided in the kit) to the 25 ml mark with your sample.
2) Place the ampoule in the sample cup. Snap the tip by pressing the ampoule against the side of the cup. The ampoule will fill, leaving a small bubble (air-space) to facilitate mixing.
3) Mix the contents of the ampoule by inverting it several times, allowing the bubble to travel form end to end each. Then wipe all liquid from the exterior of the ampoule. Wait 2 minutes for color development.
4) Hold the comparator (included with kit) in a horizontal position while standing directly beneath a bright light source (try to avoid reflective interference). Place the ampoule between the color standards moving it from left to right along the comparator until the best color match is found. If the colors do not match, a concentration estimate can be made (range).

The Clean Water Team Guidance Compendium for Watershed Monitoring and Assessment
State Water Resources Control Board 3111.doc 3/4/2010

www.waterboards.ca.gov/water_issues/programs/swamp/docs/cwt/guidance/111.pdf

Online Resources- Interactive 1/4

Aquatic Bioassessment Laboratory

www.dfg.ca.gov/abl/lab/california_referencecollection.asp

California Digital Reference Collection

Orders (Click the banner to jump to a specific order within the family-level page)	Habitus photo (Click thumbnail for larger image)	Distinguishing characteristics
Ephemeroptera		Three "tails" or cerci, with gills on abdomen (either dorsal or lateral, usually plate-like) and one tarsal claw.
Odonata		Mask-like labium; gills are internalized within the abdomen (Dragonflies) or external on the end of the abdomen (Damselflies).
Plecoptera		Two "tails" or cerci; gills (either plumose or finger-like) present on thorax, or on thorax and first few abdominal segments, two tarsal claws.
Hemiptera		"Half wings" – first set of wings half membranous and half sclerotized (looks like an "X"); piercing-sucking mouthparts
Megaloptera		Well-developed mandibles, four-segmented antennae. Head and abdomen are patterned; the head is also quadrate. Two claws on thoracic legs. Segmented lateral gills on abdomen.
Neuroptera		Long antennae, slender legs with single claws. Transparent gills on ventral side of abdominal segments. Mouthparts elongate and unsegmented.
Trichoptera		No "tails," just anal prolegs with claws; thorax partially or fully sclerotized, membranous abdomen. May have a "case" built of various materials
Lepidoptera		Head is distinct with a ring of simple eyes. Thorax and legs are segmented. Prolegs and anal prolegs present on abdominal segments.
Coleoptera		No anal prolegs but possibly claws.Bodies of larvae may be completely sclerotized; adults have a hardened first pair of wings ("elytra").
Diptera		Head may be sclerotized (and visible) or reduced. Legs are not sclerotized. Body fleshy (possibly with clawed prolegs) with various types of breathing structures on the tail end.
Non-Insects		Various characteristics, please see non-insects page.

Ephemeroptera

						
Ameletidae	Ametropodidae	Baetidae	Baetiscidae	Caenidae	Ephemerellidae	Ephemeridae
						
Heptageniidae	Isonychiidae	Leptohyphidae	Leptophlebiidae	Oligoneuriidae	Polymitarcyidae	Siphlonuridae

Ephemeroptera

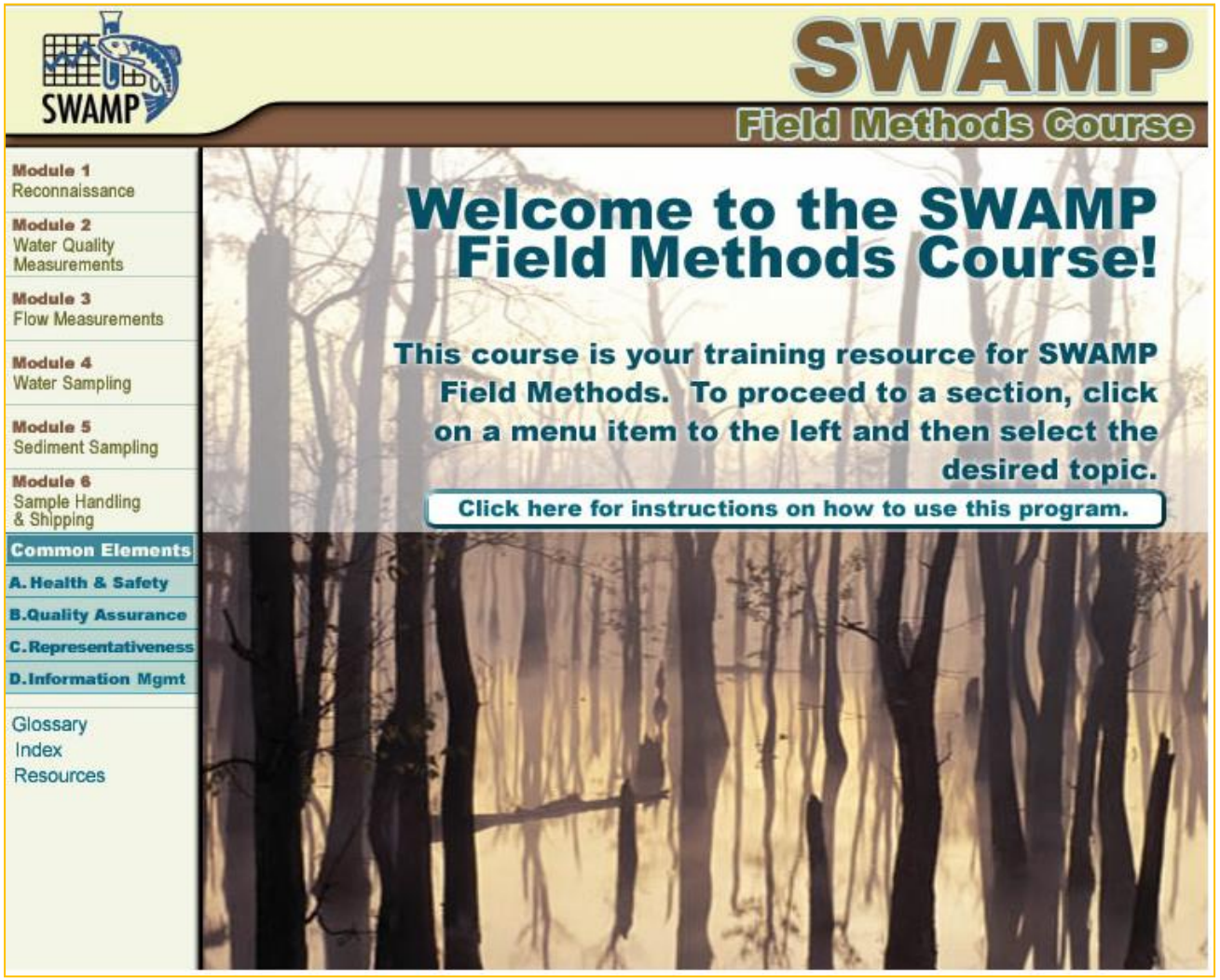
Ameletidae





Key Characters	Labrum with a median notch on distal margin, terminal filament subequal to cerci. Antennae usually shorter than width of head, maxillae with crown of pectinate spines. Abdominal gills with single oval lamella with a sclerotized band along lateral margin and usually with a similar band on or near mesal margin.
Tolerance	0
Distribution	CA, OR, WA, NV, AZ

Interactive Media 1/3



http://water101.waterboards.ca.gov/swamp/qapp_advisor/FieldMethods/start.html/

Module 2 - Water Quality Measurements

What's in this Module?

Module 2 - Water Quality Measurements

Topic 2.1 Introductions

2.1.1 Measurement Quality Objectives (MQOs)

- MQOs are based on the extent of measurement error that we can tolerate
- Accuracy = how far is the result from the true value
- Precision = closeness of two measurements taken at same place and same time

Examples of MQOs for accuracy of field measurements

Dissolved Oxygen	+/- 0.5 mg/l
Specific Conductivity	+/- 5%
Temperature	+/- 0.5 C
pH	+/- 0.3 units

Read about Quality Assurance

Expert Systems & Web Based Tools

Web-based tools provide information accessible to internet users.

Expert Systems are interactive software programs or on-line tools that compiles user input into a content rich product.

At the same time, the user learns the rationale for the requested input and gains direct access to supporting information and resources.

Expert System – SWAMP Advisor

http://swamp.waterboards.ca.gov/swamp/qapp_advisor/

This is an interactive on-line tool that compiles user input into a Quality Assurance Project Plan (QAPP).

(Similar to tax preparation software.)

Webinar Tutorial: https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=40383757&rKey=d55073413666e505

EMMA Environmental Monitoring & Measurement Advisor

EMMA combines decision criteria based on systematic planning (including all elements of EPA's Data Quality Objective (DQO) process), your specific project needs, and methods information from the new National Environmental Methods Index (NEMI). It also incorporates the latest information from EPA's new Triad Approach and EPA's new Performance and Acceptance Criteria (PAC) Process. www.emma-expertsystem.com

- The first module incorporates decisions based on what, where, when, why, and how you plan to monitor a site (including your QA/QC requirements and budget).
- The second module (Method Selection) is freely available on the NEMI web site so that it can be used with NEMI and people can become familiar with the expert system and how it works.
- The third module calculates how many samples you'll need for your project requirements and matches that to your available budget and desired confidence levels in the data

StreamStats

StreamStats is a map-based Web application that provides information that can be used by engineers, hydrologists, managers, planners, and others to make informed decisions on water-related activities

Primary products are basin delineations, basin characteristics, and estimates of streamflow statistics

Provides information for gaged and user-selected ungaged sites on streams

http://water.usgs.gov/osw/streamstats/

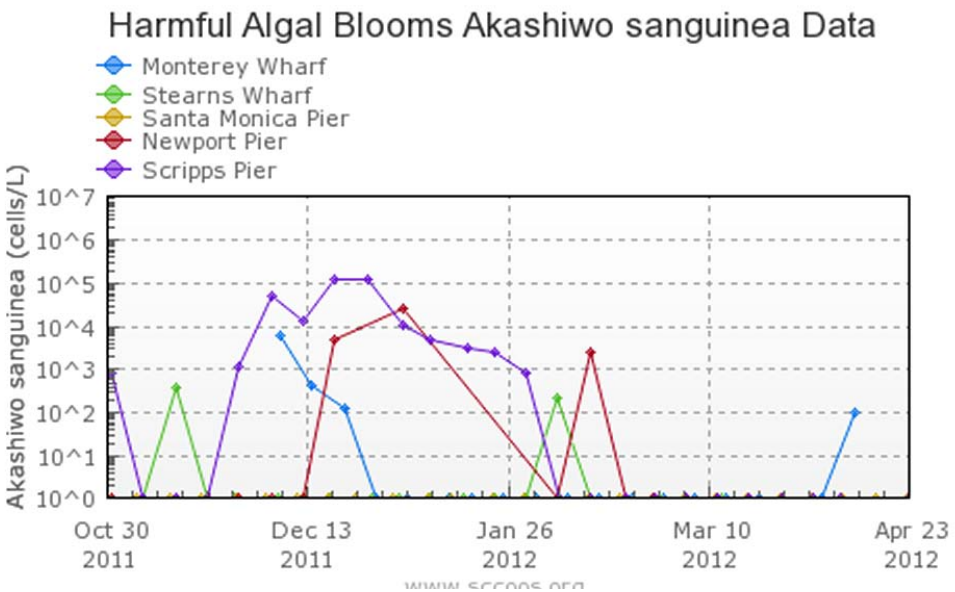
Integrated Ocean Observing System SCCOOS

Available Products

- Automated Shore Stations
- Bathymetry
- CA ASBS System
- Gliders
- Harbors
- Harmful Algae & Red Tides
- Manual Shore Stations
- Meteorological Observations
- Moorings
- Plume Tracking
- ROMS Model Output
- Satellite Imagery
- Ship Tracking (AIS)
- Ship Casts
- Surface Current Mapping
- Wave Conditions (CDIP)
- Winds & Rainfall Forecasts

Available Services

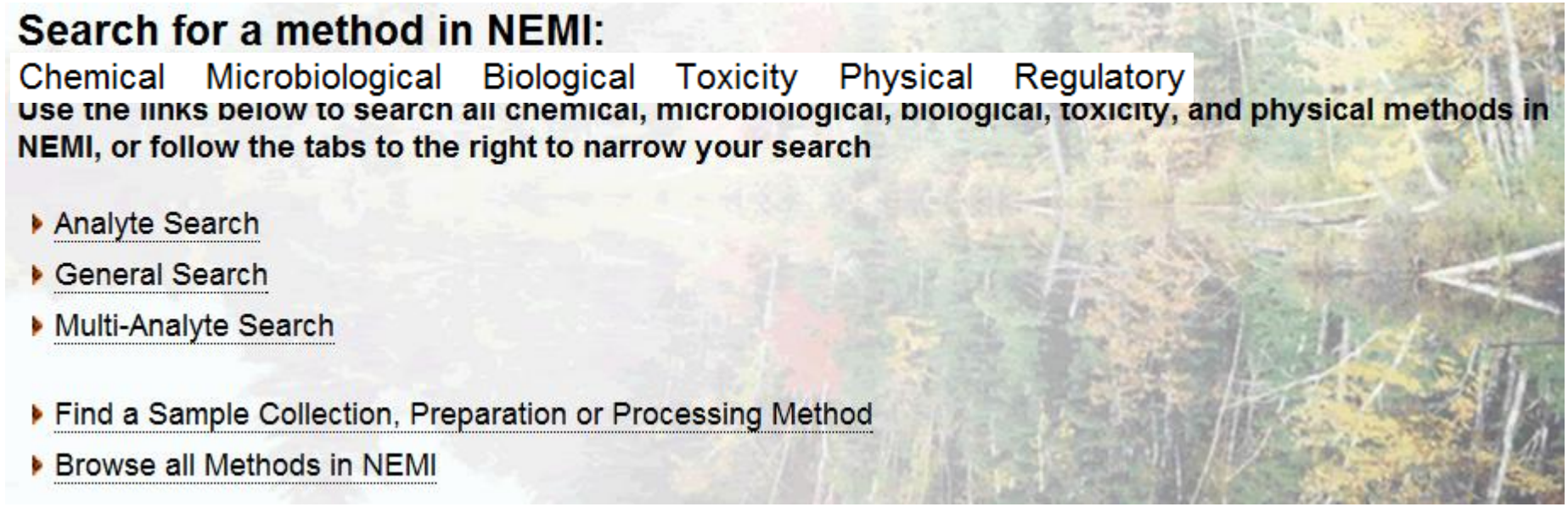
- Grab Raw Data
- Advanced Mapping Applications
- KML Feeds



www.sccoos.org/

National Environmental Methods Index

NEMI is an online clearinghouse of environmental monitoring methods. The NEMI database contains chemical, micro-biological and radiochemical method summaries of lab and field protocols for regulatory and non-regulatory water quality analyses.



https://www.nemi.gov/apex/f?p=237:1:6969553414583588

Methods for Environmental Measurements and Observations

MEMO is designed to bring together information from NOAA's Alliance for Coastal Technology (ACT) and the National Environmental Methods Index (NEMI).

The ACT Technology Database is a continuously updated catalogue of instrumentation used for coastal and ocean science and observations, designed to help you identify technologies available to meet your specific needs. Search by environmental parameters, sensor types or manufacturers

http://infotrek.er.usgs.gov/apex/f?p=240:1:4268341843800101

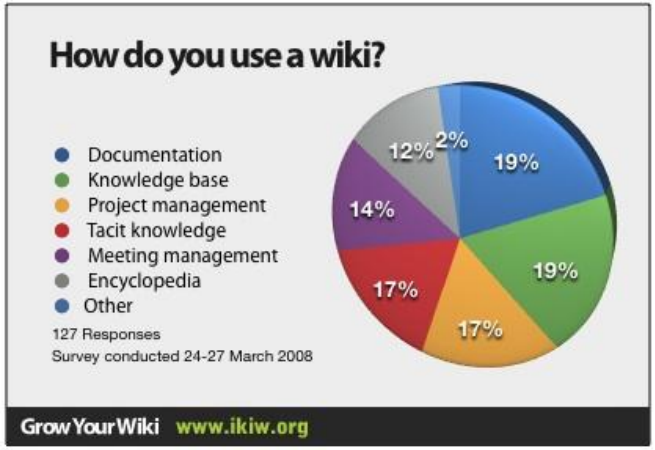
MEMO BETA
Methods for Environmental Measurements and Observations

MEMO - Search for DO Sensors

Sensors (Source: Alliance for Coastal Technologies)

Name	Model Name	Analyte	Accuracy	Sample Rate	Manufacturer
Global Water CellOx 325 Dissolved Oxygen Electrodes	CellOx 325 Dissolved Oxygen Electrodes	Dissolved Oxygen	-	-	Global Water
Global Water DurOx 325 Dissolved Oxygen Electrode	DurOx 325 Dissolved Oxygen Electrode	Dissolved Oxygen	-	-	Global Water
YSI EcoSense (R) 200-BOD	EcoSense (R) 200-BOD	Dissolved Oxygen	Temperature: +/-0.3 degC +/-1 digit DO: +/-2% of the reading or +/-2% air saturation, whichever is greater	-	YSI
JFE ALEC CO LTD Compact DOW	Compact DOW	Dissolved Oxygen	DO: +/-1%, Temperature: +/-0.05 degC	0.5,1,2,5,10,15,20,30(sec.)	JFE Advantech Co
Aanderaa Data Instruments Oxygen Optodes 3835/4130/4175	Oxygen Optodes 3835/4130/4175	Dissolved Oxygen	<5%	1s to 255 minutes	Aanderaa Instruments
Sea-Bird Electronics SBE 43 Dissolved Oxygen Sensor	SBE 43 Dissolved Oxygen Sensor	Dissolved Oxygen	2% of saturation	-	Sea-Bird Electronics
AMT Shallow Water DO Micro-sensor	Shallow Water DO Micro-sensor	Dissolved Oxygen	2% (measuring value)	200ms	AMT
YSI ProODO	ProODO	Dissolved Oxygen	1% or 15% of reading; +/-0.2 degC; +/-1.5 mmHg from 0 to 50 degC	-	YSI
Global Water WQ-FDO Optical Dissolved Oxygen Transmitter	WQ-FDO Optical Dissolved Oxygen Transmitter	Dissolved Oxygen	1% of reading or 0.02 ppm, whichever is greater (DO); +/-0.1 degC (temp)	-	Global Water
Eureka Environmental Manta2 Optical Dissolved Oxygen Sensor	Manta2 Optical Dissolved Oxygen Sensor	Dissolved Oxygen	0.1 mg/L < 8 mg/L, 0.2 mg/L 8-25 mg/L	-	Eureka Environmental
Global Water DO600 Dissolved Oxygen Meter	DO600 Dissolved Oxygen Meter	Dissolved Oxygen	+2.0%FS	-	Global Water
YSI 550A Dissolved Oxygen Instrument	550A Dissolved Oxygen Instrument	Dissolved Oxygen	+/-2-6% of reading; +/-0.3 degC	-	YSI
Aquamatic Oxygen Sensor	Oxygen Sensor	Dissolved Oxygen	+/-2%	-	Aquamatic
Campbell Scientific CS511-L Dissolved Oxygen Probe	CS511-L Dissolved Oxygen Probe	Dissolved Oxygen	+/-2%	-	Campbell Scientific
In-Situ Clark Cell DO Sensor	Clark Cell DO Sensor	Dissolved Oxygen	+/-0.2 mg/L	-	In-Situ
HACH Environmental Dissolved Oxygen Sensor	Dissolved Oxygen Sensor	Dissolved Oxygen	+/- 0.2 mg/L for 20mg/L or less, +/- 0.6 mg/L for over 20 mg/L	-	HACH Environmental
HACH Environmental Hach LDO Sensor	Hach LDO Sensor	Dissolved Oxygen	+/- 0.1 mg/L at <8 mg/L; +/- 0.2 mg/L at >8 mg/L; +/- 10% reading >20 mg/L	-	HACH Environmental

Wikis



A wiki is a website whose users can add, modify, or delete its content via a web browser using a simplified markup language or a rich-text editor. Most are created collaboratively.

- Wikis may serve many different purposes, such as knowledge management and notetaking.

- Wikis can be community websites and intranets.

Some permit control over different functions (levels of access).

-For example, editing rights may permit changing, adding or removing material.

-Others may permit access without inforcing access control.

-Other rules may also be imposed for organizing content.

Wiki Examples

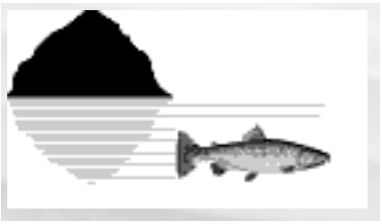
WaterWiki.net - The Wiki for Water Professionals worldwide. Find water & sanitation related materials, knowledge and experience from UN practitioners, agencies and their programs around the globe - and contribute your own!

Envirowiki is a wiki for the environment movement. It is a place for drawing together theoretical, scientific, and practical knowledge on environmental issues. And anyone can edit and contribute.

Example of a Wiki Use

Contents [hide]

A Succession Plan for the Central Coast Ambient Monitoring Program



"Planning for the Future"

The CCAMP mission is to collect, assess and disseminate water quality information to aide decision makers and the public in maintaining, restoring and enhancing water quality and associated beneficial uses in the Central Coast Region.

There are several CCAMP programmatic objectives:

- Assess watershed condition on a five-year rotational basis, using multiple indicators of health.
- Assess long-term water quality trends at the lower ends of coastal creeks.
- Conduct periodic assessments of harbors, estuaries, lakes and near-shore waters using multiple indicators of health.
- Support investigations of other water quality problems, including emerging contaminants, sea otter health, pathogenic disease, toxic algal blooms and others.
- Provide water quality information to users in accessible forms to support decision-making (www.ccamp.org).
- Collaborate with other monitoring programs to promote effective and efficient monitoring.

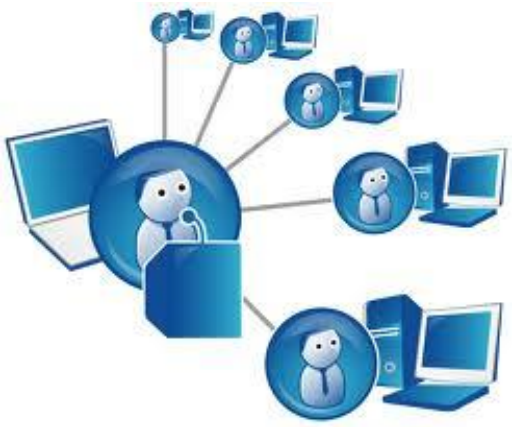
www.ccamp.net/ccamp/index.php/Main_Page

Webinars

Web conferencing services that allow conferencing events to be shared with remote locations.

What

- Web-cast seminars
- VOT-Voice over telephone (conference call)
- OVOI-Voice over internet
- Reservations or no reservations
- Recordable



Uses

- Timely presentations of emerging topics
- Real-time discussions
- Collaborations/ Networking
- Live access via internet and smartphones
- 24/7 access to webinar recordings
- Training
- Viewing rooms
- Enrichment
- Participate and review

Webinar Services

Web conferencing services vary from free to fee based use and subscriptions.

Options also vary: length, recording, VIO, VOP, number of attendees, showing video…

Examples:

Verizon Small Business Web Conferencing
Microsoft Office Live Meeting
Adobe Acrobat Connect Pro
Cisco WebEx (supports mobile devices)
Any Meeting
GatherPlace
Freebinar

CWQMCN CWT Facilitated Webinars

California Water Quality Monitoring Collaboration Network Webinar Series

WEBINARS: 6/2009-6/2012

- Water Quality Goals
- StreamStats: A Streamflow Web Application
- Finding the Right Funders
- Ecological Condition Assessments of California's Perennial Wadeable Streams: Highlights from the SWAMP's PSA
- An Introduction to the Concept of Reporting Limits
- Yurok Tribe Water Quality Monitoring Program: A Tribal Perspective on the Development of a Comprehensive Water Quality Monitoring Program
- The Stream Pollution Trends Program (SPoT)
- Integrated Watershed Management
- Monitoring Trash, TMDLs and Efforts Towards Compliance
- Health and Safety Responsibilities for Program Managers of Water Quality Monitoring Projects
- Introduction to the National Environmental Methods Index (NEMI)
- Selecting and Working With Laboratories
- Application of the USGS SPARROW model to Understand Nitrogen and Phosphorus Transport in California
- Water Quality Monitoring Sensors
- Monitoring Directories-Demonstration of the Central Valley Monitoring Directory
- Introductory Mine Waste Characterization
- Collaborations for Healthier Streams: California Watersheds and AmeriCorps Programs
- Using the California Data Exchange Network (CDEN)
- Developing a Comprehensive Watershed-wide Monitoring Program for Surface Water
- An Introduction to the California Rapid Assessment Method (CRAM) for California Wetlands
- Riparian Proper Functioning Condition Assessment (PFC) as a Tool to Inform Land Managers About Priorities for Addressing Water Quality
- Invasive Species Risk Assessment and Planning (ISRAP): A New Tool for Managing the Risk of Moving Aquatic Invasive Species in Natural Resource Monitoring and Management Activities
- Developing a California Whole System Report Card
- Site-Specific Profiles of Fish Feminization in Surface Waters of California Indicate Multiple Causes of Estrogenic Activities
- Orange County CoastKeeper: Redefining the Realm of Citizen Monitoring
- Microbial Source Tracking (MST)
- Genetic Testing of Cyanobacteria Blooms
- Friends of Deer Creek: Linking Science, Water and People
- Aquatic Invasive Species
- Citizen Monitoring in Watersheds Flowing to the Monterey Bay National Marine Sanctuary
- Clean Water Act (CWA) & 305(d) Solicitation and Data Submission Process
- California Data Uploading and Checking System
- California Clean Water Team
- California Water Quality Monitoring Council

www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/index.shtml

http://www.webex.com/

Maps

esri

Powered by Google™ Maps

batchgeo
Mapping should be this easy

planiglobe®

ZeeMaps
We map your lists

Mobile Maps

We have native and cross platform apps for many GPS enabled mobile phones and tablets including:

- iPhone and iPad
- Android
- Blackberry
- Windows Phone 7

Mobile app »

CWT Use of Batchgeo

- Locate a citizen monitoring organization.
- App asks if you'd like to locate the closest mapped location (nearest citizen monitor).

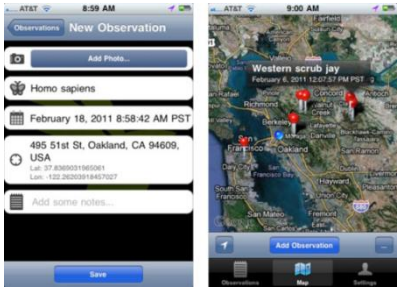
Latitude - Longitude

- http://itouchmap.com/latlong.html
- http://www.findlatitudeandlongitude.com/
- http://www.gorissen.info/Pierre/maps/googleMapLocationv3.php

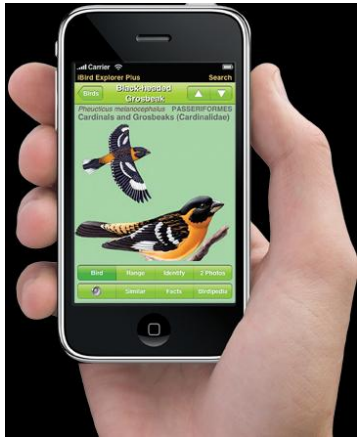
Mobile Applications

Application software developed for small low-power handheld devices.

Citizen Science and Naturalist Mobile Application Examples



iNaturalist



Weather App Examples

ProWeatherAlert

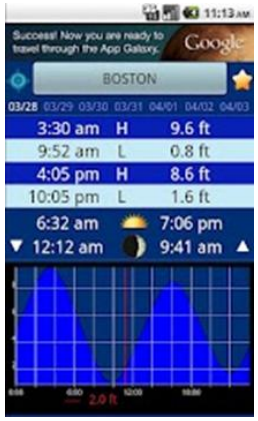
This app runs in the background and monitors the official National Weather Service (NWS) alerts for your area. New alerts will appear on the status bar, and by selecting it, you can read the details. You can also choose how urgent of a notification to get, based on the NWS Severity. An Extreme alert coming through? Then you'd probably like vibrate, lights AND bell for that! But a simple Wind Warning? Probably not as much. You can choose the level of response in the preferences.

US Tides

Seven days tides tables and charts for more than 2,400 US locations as provided by NOAA (National Oceanic and Atmospheric Administration).

Displays sunrise, sunset, moonrise, moonset times and moon phase.

Uses geolocation to find closest locations.



Radar Alive

This app brings live US weather radar to your Android from all states and Puerto Rico. It features a powerful, flexible user interface. Watch tornadoes, hurricanes and other weather events live and in fine detail. It is suitable for storm chasers, professional meteorologists, emergency personnel, SKYWARN and weather enthusiasts. It has the widest selection of US radar products (image types) of any Android App. NWS severe weather warnings are displayed along with a customizable low clutter map with cities, roads, boundaries and cities.
Unlike many radar apps, Radar Alive! generates precision images from NEXRAD Level III binary data. With its velocity images, you can even spot storms with tornadoes.

Health and Safety App Examples

ICE: In Case of Emergency

Medical data & contacts for first responders in case of emergency involving you
Stores important information for first responders and hospital staff to use in case of an emergency involving you:
+ A list of people to call -- can call directly from the app
+ Insurance information
+ Doctor names and numbers -- can call directly from the app
+ Allergies
+ Medical Conditions
+ Medications
+ Any special instructions or other information you wish to provide

First Aid

First Aid is designed to help you follow the right procedures in a stressful situation or support other people by giving them instructions. It is based on illustrations, videos and short texts that show you how to take the necessary action step by step and in the right order.

Pocket First Aid & CPR

First Aid & CPR from the American Heart Association
- Updated to reflect The American Heart Association Guidelines on CPR & Emergency Cardiovascular Care
- 34 videos and 46 high-resolution illustrations added
- Added Search functionality
- Reorganized content to make it easier to find help in an emergency
- Adult, Child, and Infant CPR
- Adult, Child, and Infant Choking
- New user interface for ease of use

Examples of Field Tool Apps

Water Tracker (beta)

Track river levels and set alerts. Never miss a day running the river again! Retrieve current data like water level, temperature, and stream flow from USGS servers for rivers, reservoirs, lakes and more. Features include ability to search by current location, user selected location, view graph of last 5 days activity, view data source on map, set alerts for any available condition. This application will work anywhere in the US. This application uses data from USGS servers. NOT ALL RIVERS LAKES or STREAMS will be listed. Only those that USGS monitors. To find out if the data you are interested in is available go to http://wdr.water.usgs.gov/nwisgmap/ Note that not all data is available for all locations.

Civil Water Flow Calculator

This application is civil water flow calculator.
It calculates pipe channel flow and open channel flow of various channel shapes.

Insta-LINK® HOME

Turn your Smartphone into a Test Strip Scanner
As a pool or spa owner you know that maintenance can be a lot of work. You need to test and balance the water, keep the filter and baskets clean, vacuum the leaves and debris, and that's just regular maintenance.

Calibrated Accurate Level

Measure angles more accurately with unique latitude calibration.
* Unique Latitude Calibration with local gravity and GPS
* Advanced Trigonometry
* Sophisticated Sensor Analysis.

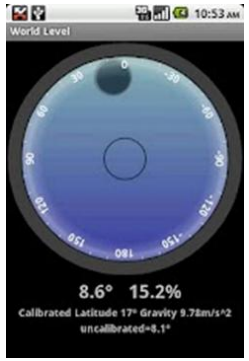


Photo App Examples

PICASPOT

An app that attaches the following information to a photo and sends it to a user as an attachment:

- Latitude and longitude of a photo;
- Street location where available;
- Compass reading of the phone (Note, a phone held in portrait setting will record the direction of photo);
- Date and time the photo was taken.

GPS Photo is a mobile phone client application for sharing positioning photos. This product combines multiple functions including mobile phone positioning, taking photos and map. You can share your photos with GPS data and mark them on the map in real time.

Camera Remote

Main Functions:

1. Bluetooth Mode and WiFi Mode,
2. Remote Camera Control from another Android, Notebook, or Desktop PC.
3. Remote Viewfinder (realtime)
4. Record preview frames and play instantly.
5. Take remote photo, list, and dwonload images.
6. Change remote camera settings.
7. Change preview frame rates.
8. Change UI (user interface) skin colors.
9. Sound on/off
10. File Explorer
11. Image/Text viewer
12. Record Player

SpotMarker

This is the application to mark many favorite spots on the map.

MarkPhotoSpot

What this application do?

* Save location (GPS) information with photo
* Add location description on it.
* And, find or locate them where they were.
* Features including, GPS info, address, map directions, and more.
* My location feature shows where you are now with GPS info.

The application could be used for!

* Mark where your car/motorcycle/bicycle is parked
* Mark your family locations
* Mark favorite places where you like to keep with photos
* Log your travel with photo location
* Save the places where you want to keep for later references
* And, application could be used as Simple Photo Album.

PhotoLocator

Find and display pictures on the map, recall and get the direction to there.

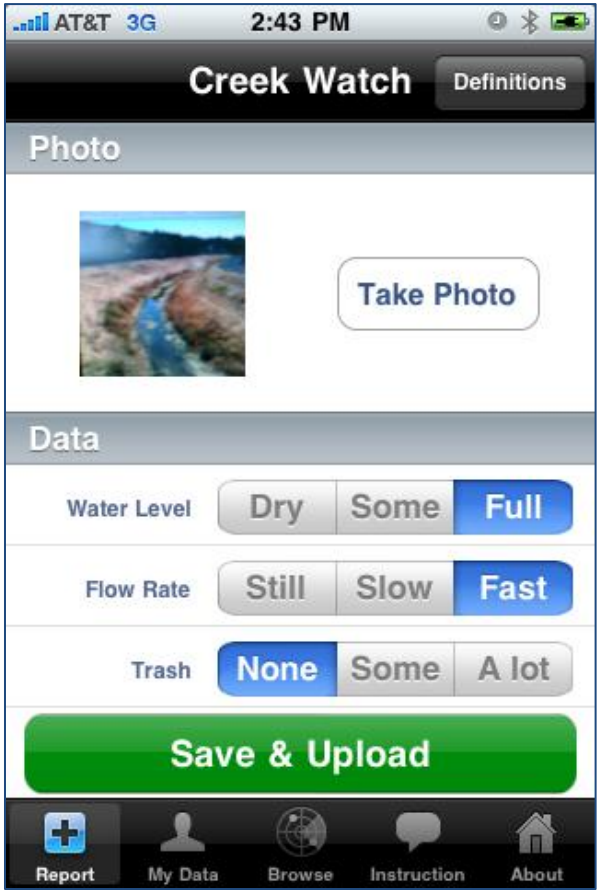
See the pictures, display them on the map, and recall where you visited. You can find direction to go threre.

You can take picutres of grocery, restaurant, or where you parked the car, and find them!!

Crowdsourcing & Apps

Crowdsourcing is a process that involves outsourcing tasks to a distributed group of people. This process can occur with the use of mobile devices, as well as both online and offline. The difference between crowdsourcing and ordinary outsourcing is that a task or problem is outsourced to an undefined public rather than a specific body, such as paid employees.

Creek Watch App



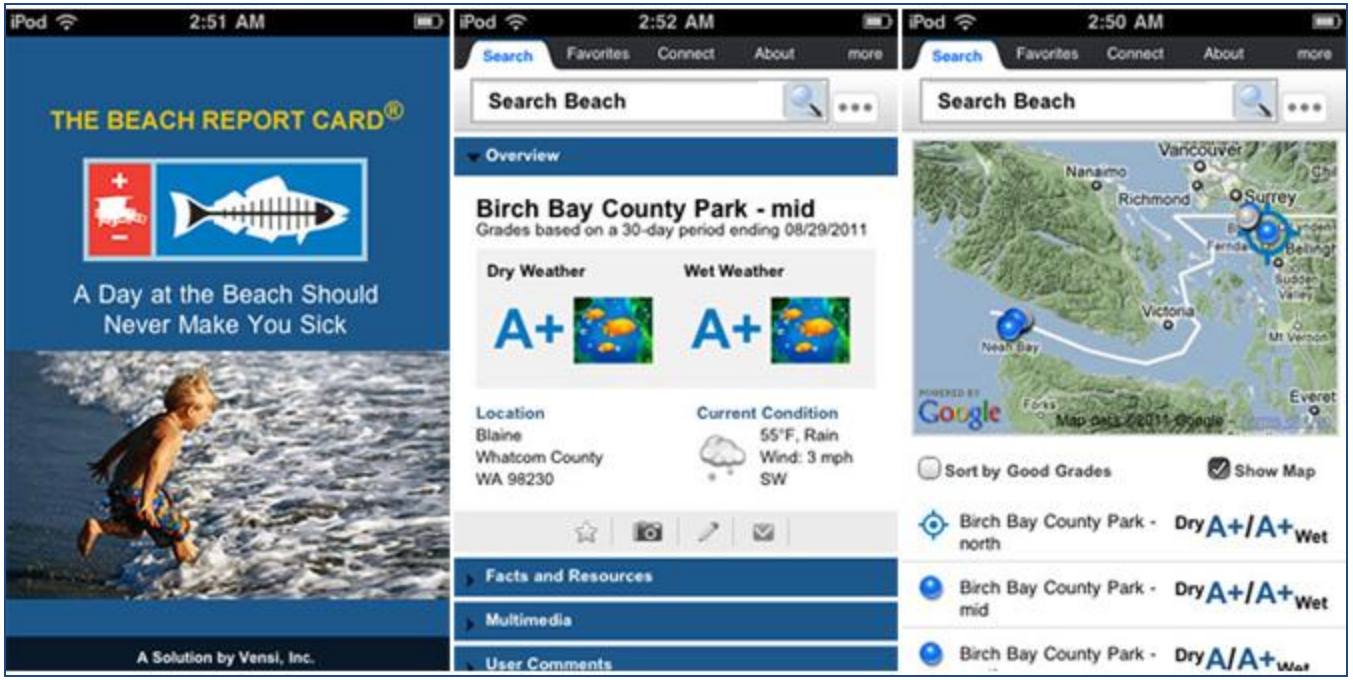
http://creekwatch.researchlabs.ibm.com/

Worldwide

What's Invasive! App

The location of each weed that a citizen scientist documents in the park is automatically uploaded to the What's Invasive! website, allowing park staff and the public to see maps of invasive weed clusters and how they are spreading in the mountains.

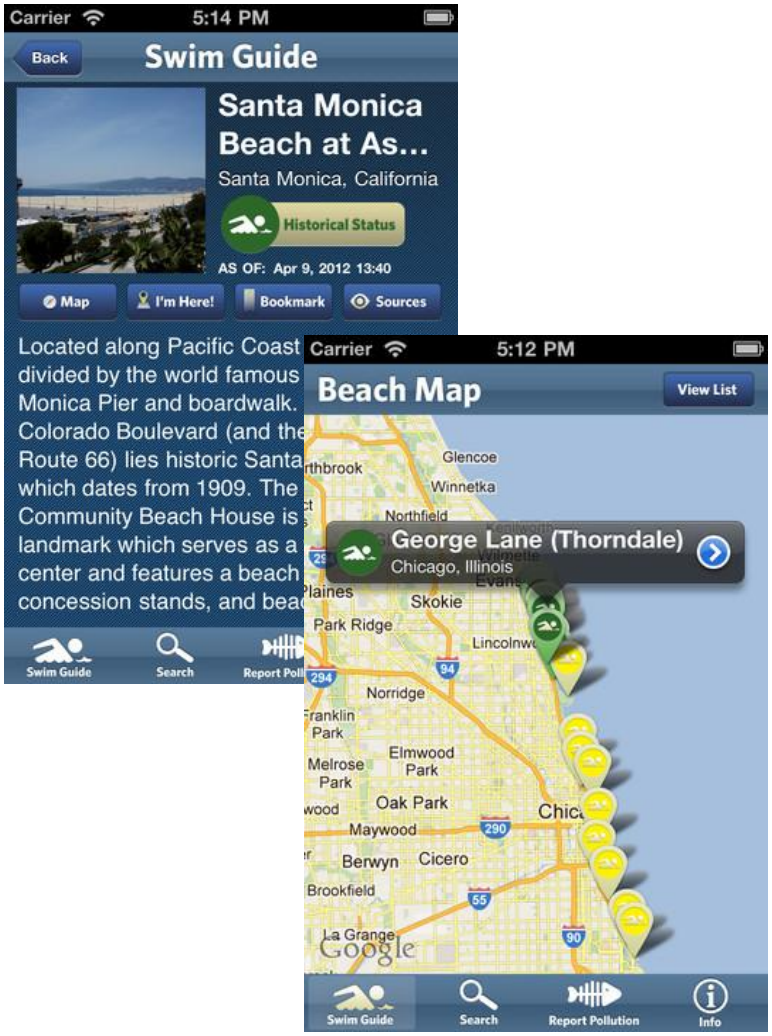
Beach Report Card App



Beachgoers can now check the latest water quality grades at 650+ West Coast beaches via Heal the Bay's Beach Report Card mobile app.

Swim Guide

The Swim Guide makes it easy to explore and enjoy the best beaches in *** CALIFORNIA (NEW!) ***, FLORIDA, the GREAT LAKES, Western Canada. You can list the beaches closest to you, browse the map, or search for a beach by name. Every beach is marked with a Green, Yellow, or Red icon so you know when a beach is safe for swimming and when it is not safe.



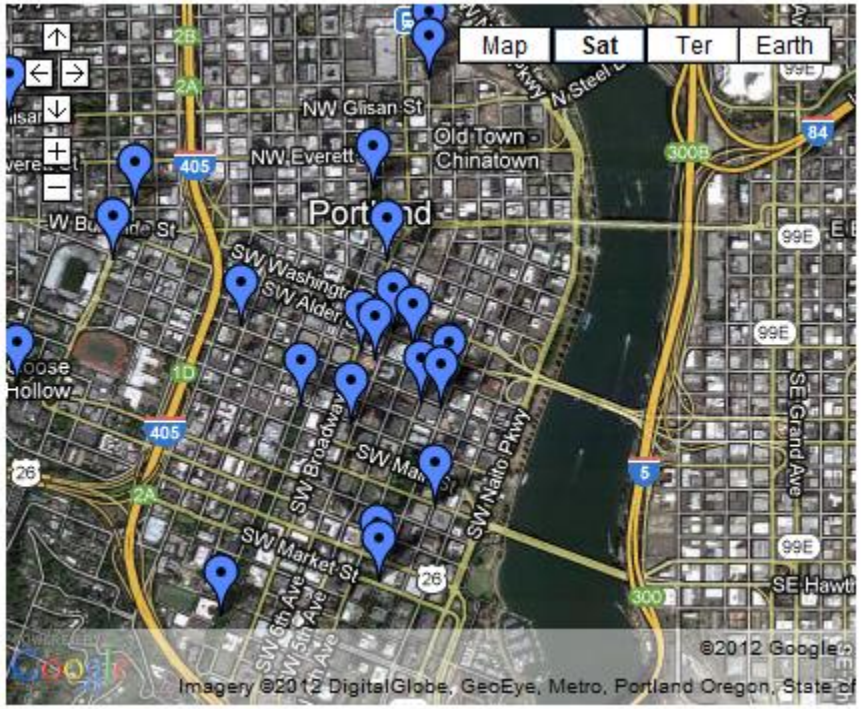
US & Canada – Great Lakes +

Water Quality Reporter (WQR) App

Water Quality Reporter (WQR) application. The reporting application allows people with mobile phones to submit water quality test results via SMS. The iCOMMS team have also developed mechanisms for integrating water quality results into existing information systems, and a feedback loop between communities and supporting authorities. *South Africa*

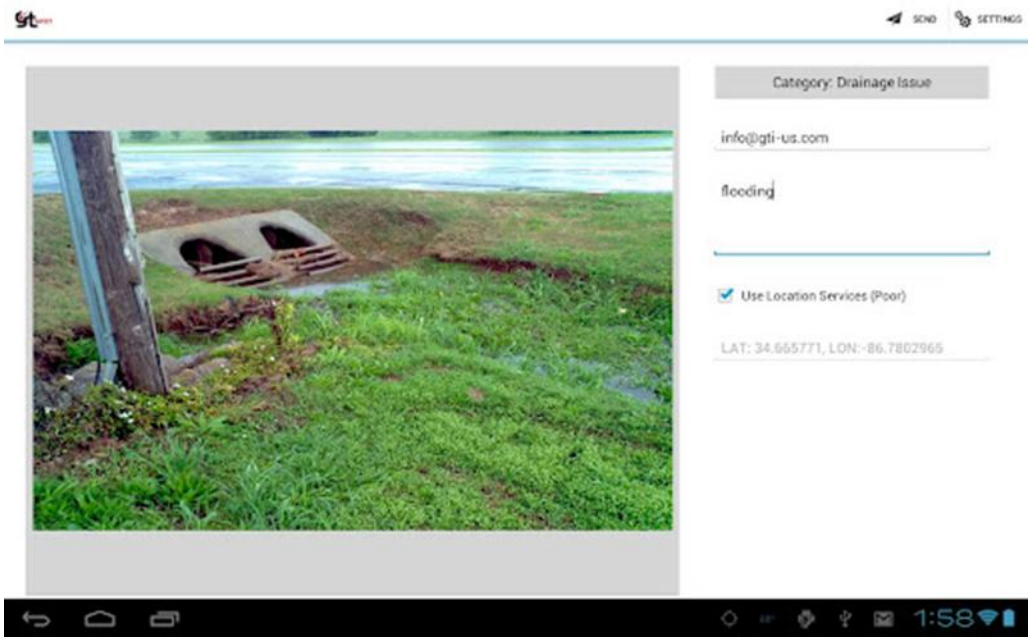
We Tap App

WeTap works on mapping and improving drinking fountain infrastructure and re-educating the public on the accessibility of safe tap water.



http://we-tap.appspot.com/

Additional Crowdsourcing Apps



GTSpot facilitates crowdsourced, incident reporting. Users can quickly and easily report a Problem, Damage, Issue, or Observation with a photo, note, and geographic location. These reports are send to a GTWeb Server and can be used in conjunction with GTWeb or independently.

Mobilize™ helps nonprofits, political campaigns, and other groups utilize the power of crowdsourcing by giving their supporters a tool for sharing info, collecting data, and facilitating donations.

*Share text, images, and video.
*Collect contact, and demographic
*Conduct surveys.
*Facilitate donations

Easy to Use Crowdsourcing Tools

Ushahidi platform is a tool to easily crowdsource information using multiple channels, including SMS, email, Twitter and the web.

SwiftRiver is an open source platform that aims to democratize access to tools for filtering & making sense of real-time information.

When you need to get the Ushahidi platform up in 2 minutes to crowdsource information, Crowdmap will do it for you. It's a hosted version of the Ushahidi platform.

Ocean Friendly Gardens Crowdsouced Map

An Ocean Friendly Garden (OFG) is a garden that applies CPR – Conservation, Permeability, and Retention – to revive the health of our watersheds and oceans. Be a Part of the Solution, Not the Pollution

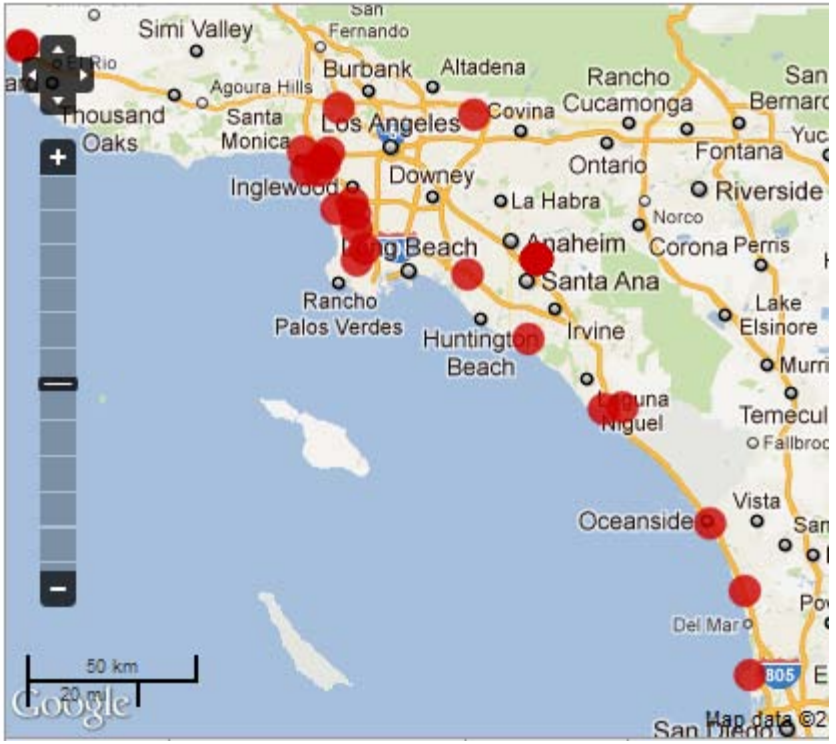
- ALL CATEGORIES
- PERMEABILITY
- CONSERVATION
- RETENTION

How to Report

By using an app:
iPhone
Android

By sending an email:
pherzog@surfrider.org

By filling this form on our website.



//oceanfriendlygardens.crowdmap.com

Social Media & Blogs

Social Media included web-based and mobile technologies used to turn communication into **interactive dialogue between organizations, communities, and individuals.**

Blogs (Web logs) web published journal entries (posts).

Types of Social Media

Six Basic Types of Web-based Social Media

- Collaborative projects (e.g., Wikipedia)
- Blogs and microblogs (e.g., Twitter)
- Content communities (e.g., YouTube)
- Social networking sites (e.g., Facebook)
- Virtual game worlds (e.g., World of Warcraft)
- Virtual social worlds (e.g. Second Life).

Why Involve Your Program with Social Media?

Because they work.

"Its now no longer a consideration of whether an organization uses Social Media, but how they will use Social Media."

- Social networking now accounts for 22% of all time spent online in the US.
- A total of 234 million people age 13 and older in the U.S. used mobile devices in December 2009.
- Twitter processed more than one billion tweets in December 2009 and averages almost 40 million tweets per day.
- Over 25% of U.S. internet page views occurred at one of the top social networking sites in December 2009, up from 13.8% a year before.

Which Social Media Site(s) Should I Use

Use the One(s) That:

- What Social Media Site(s) does **your target audience use?**
- Which Social Media Site(s) **offers the service(s) that your are in need of?**
- Which Social Media Site(s) can **your program support** (especially time wise: messaging, censoring…).
- Use a Social Media Site(s) that **provides the security that you feel comfortable with.**

CWT & CWQMCN Use of Social Media

Citizens Clean Water Improvement Network
Building Citizen Monitoring Capacity though Cooperation

http://ccwin.grouply.com/

California Water Quality Monitoring Professional Network www.linkedin.com/groups/

facebook

CWT Fan Page Coming Soon

#VolMon
#worldwaterday
#creekwatch

#CWT

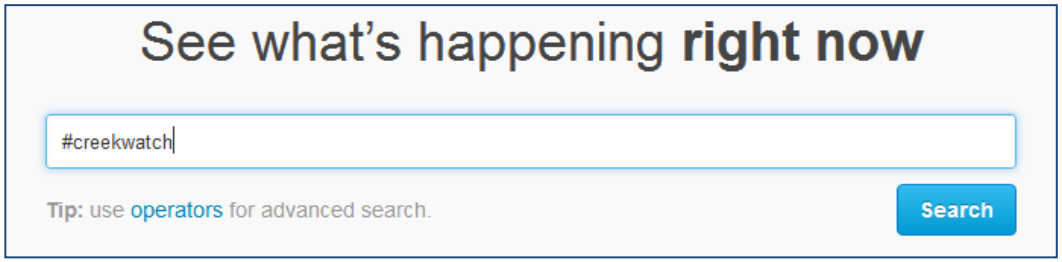
CWT Hashtag for Twitter & other sites

Hash Tags

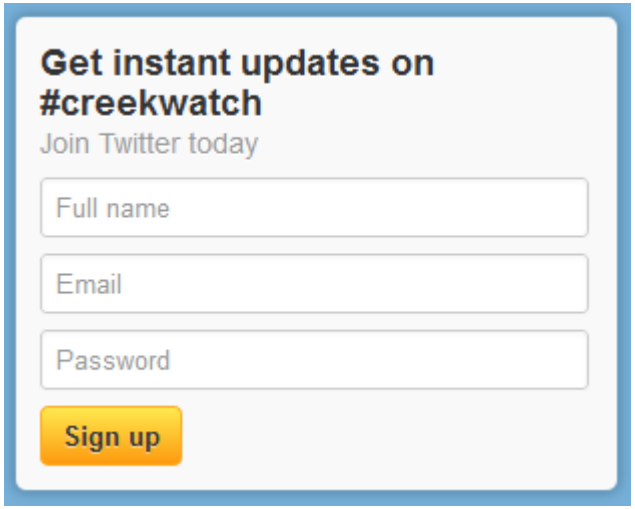
Hashtags were developed as a means to create "groupings" on Twitter, without having to change the basic service.

Hashtags are words or phrases prefixed with the symbol #, a form of metadata tag. They are used within IRC networks to identify groups and topics. Also, short messages on microblogging social networking services such as Twitter, identi.ca or Google+ .

#VolMon



http://twitter.com/#!/search-home



Twitter Hashtag Stats

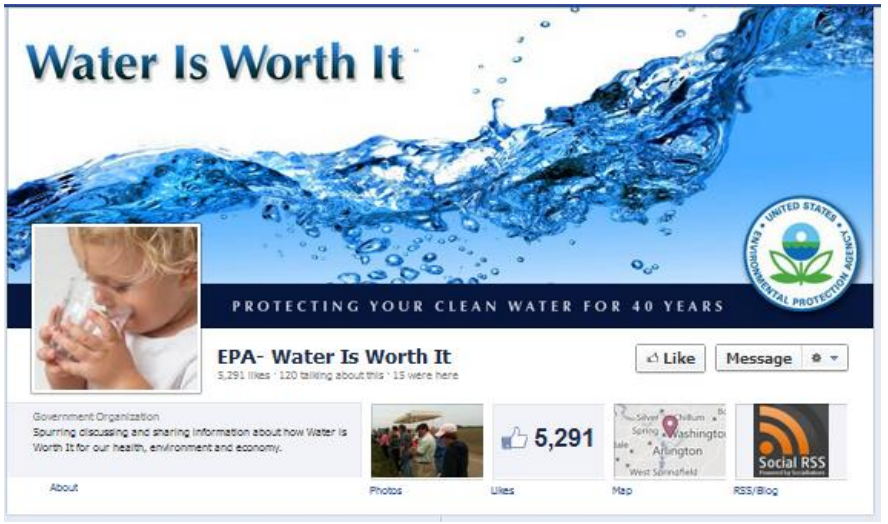
http://archivist.visitmix.com/

hashtags.org/statistics

Government Agency Uses of Social Media

- State of **Utah Social Media Guidelines** 9/29/09
- **CA Statewide Information Management Manual**
- **Resources for Government** www.facebook.com/government/app_4949752878
- **Government on Facebook**
- www.facebook.com/government

http://www.facebook.com/pages/California-Environmental-Protection-Agency/66521237678



http://www.facebook.com/EPAWaterIsWorthIt

Using Social Media Successfully

Keep It Social

- Ensure that your messages are social and not “selly”.
- Provide useful information/content.
- Keep on “message”.
- Be as “personal” as possible.
- Use images of people whenever you can. (Especially your avatar, don’t use logos.)

Video Hosting/Sharing

Video Search Engine:

Images


photobucket


SmugMug


flickr™


Kodak Gallery
Celebrate your KODAK MOMENTS


shutterfly


FOTOLOG


ImageShack
Online Media Hosting

Image Sharing Websites

Photo sharing is the publishing or transfer of a user's digital photos online, thus enabling the user to share them with others (publicly or privately). This function is provided through both websites and applications that facilitate the upload and display of images.

These sites offer a mix of services:

- Sharing Opportunities
- Photo Classification - Galleries
- Photo Finishing & Product Creation
- Hosting
- Photo Management
- Albums
- Archives
- Collaboration
- Social Network Sharing
- Sourcing

California Coastal Records Project

The Project is an aerial photographic survey of the California Coastline.

Over 66,800 photographs (totaling over 377GB) of the California coast are now online, covering from the Oregon Border (42N latitude) to the Mexican Border (32.5N latitude), www.californiacoastline.org

Present

2008

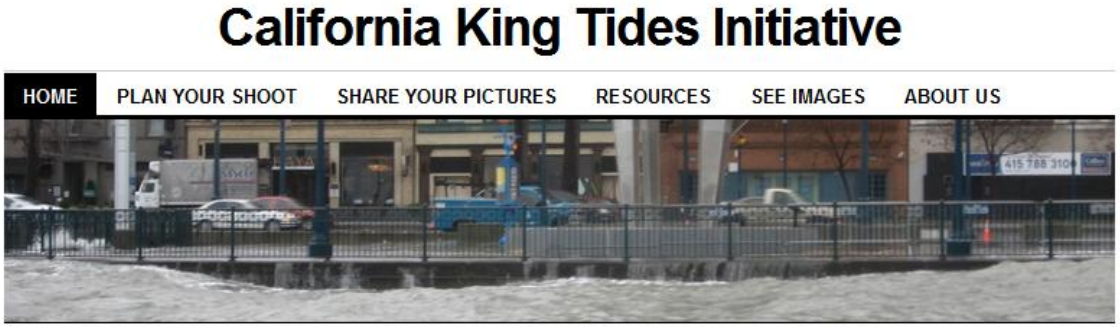
2006

2002

1993

1972

Photo Documentation:
Crowdsourced with Online Gallery and Archive



California King Tides Photo Initiative

Group Pool | Discussion | 92 Members | Map | Join This Group

Group Pool 437 items | Only members can add to the pool. Join?

Sounds & Podcasts

Online Resources to create, share, and store audio.

- Use to create Podcasts, audio blogs
- Archive sounds
- Audio sourcing for videos, websites and applications

Podcasting

Four Basic Steps:

- Plan - What will you talk about, interview or discuss?
- Produce – Record , edit and save your audio recording in an appropriate format (mp3, wav…)
- Publish – Place online for audio sharing, downloading and feeds.
- Promote – Create RSS feed, highlight in social media, prepare press releases…

Audio Promotions & Gifts

The CWT offered a free download of this track on Citizen Monitoring Coordinator Day and also offered it for “Save the Frogs Day”.

http://soundcloud.com

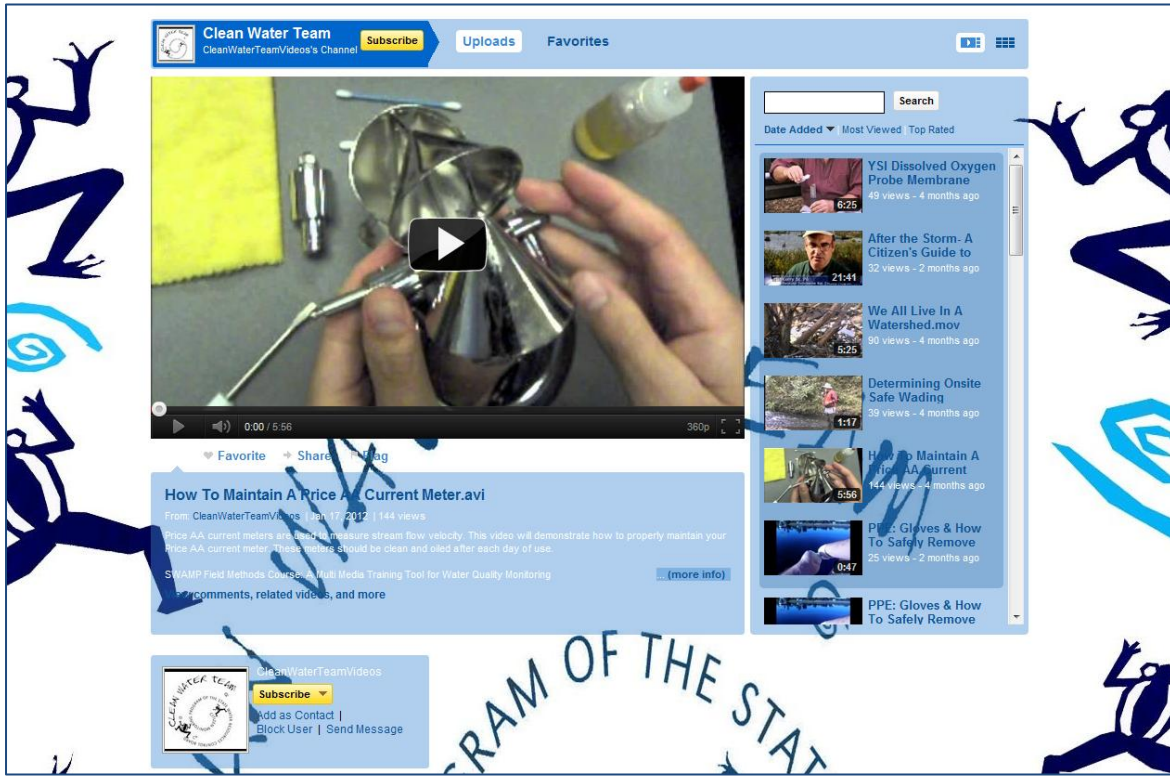
Sound Recorders & Editing

Many superb sound editing programs exist including these two free software programs.

Audacity

CleanWaterTeamVideos

A collection of CWT produced Educational and Training Videos and “Favorite” videos for citizen monitoring, watershed stewardship and environmental education.



www.youtube.com/cleanwaterteamvideos

Video Logs - Vlogs

www.youtube.com/user/Channelkeeper

green green water

VLOG is for video!

Welcome to our Vlog (Video Log)! We have taped so many amazing interviews and stories while shooting Green Green Water. These are stories of courageous folks standing up for what they believe in, stories of corporations trying to do what's right for their ratepayers by investing in renewable energy, stories of Cree leaders wanting to use their natural resources in order to live in the 21st century, stories of Cree leaders who want to invest in their people and their environment, stories of families divided by the proposed dams, stories of a family tradition stopping with their ten-year-old son...stories that we believe should be available to the general public. As we are editing the film, we will upload new clips every few days so check back often! These clips may or may not be a part of the completed film, but will give you a variety of viewpoints on such a complicated issue. Please forward this link on to your friends!

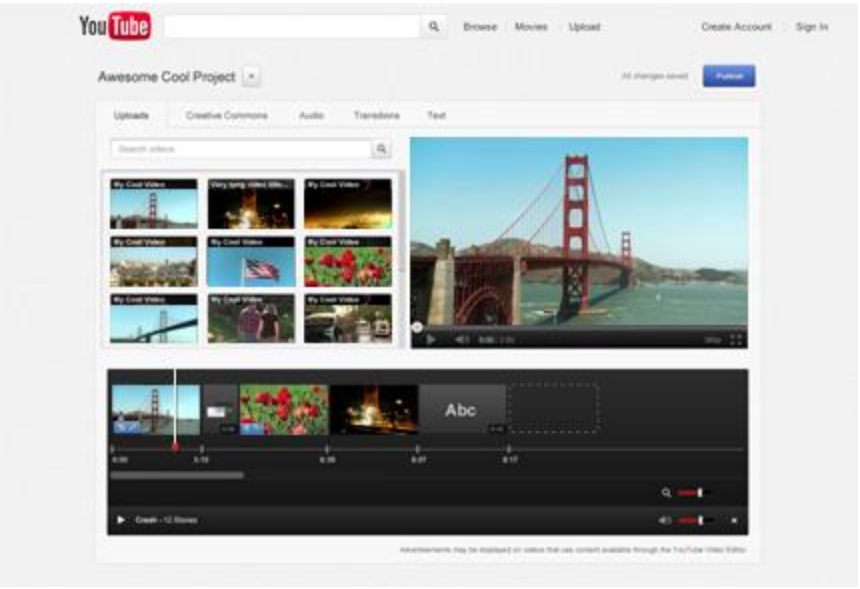
XML FEEDBURNER iTunes

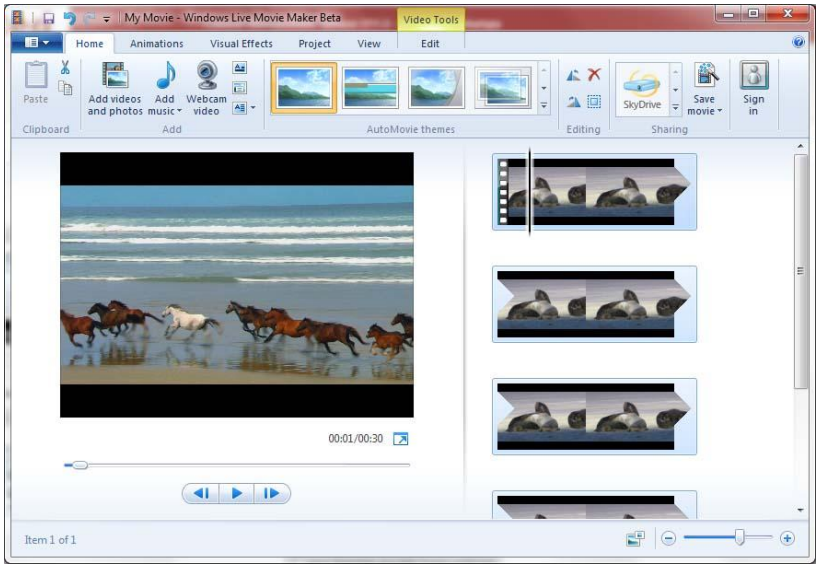
Photo & Video Log

This page contains photos and videos taken during the Bermuda Deep Water Caves 2011 exploration. Click on any image to view a larger version and for additional information. If a movie camera icon is present, a video can be viewed by clicking on the image. Multiple video formats are available on the linked pages. If a Podcast icon POD is present, a video or audio file is available for download or you can subscribe to the RSS Podcast Feed. RSS 2.0

http://oceanexplorer.noaa.gov/explorations/11bermuda/logs/photolog/photolog.html

Video Tools





- YouTube (free online)
- Windows Live Movie Maker (free download)
- Other free and paid software are available

Checkout www.youtube.com/nonprofits

Video Collaborations

Cloud video collaboration, in its broadest sense, refers to any of the communication around video assets that occurs during the production process. While cloud video collaboration platforms may well be useful during all phases of a video production project, they are particularly well suited to the production and post-production phases. To the extent that communication in these phases can be made more efficient there are savings to be had.

brightcove™

screenLIGHT

Electronic Publishing & E-Books

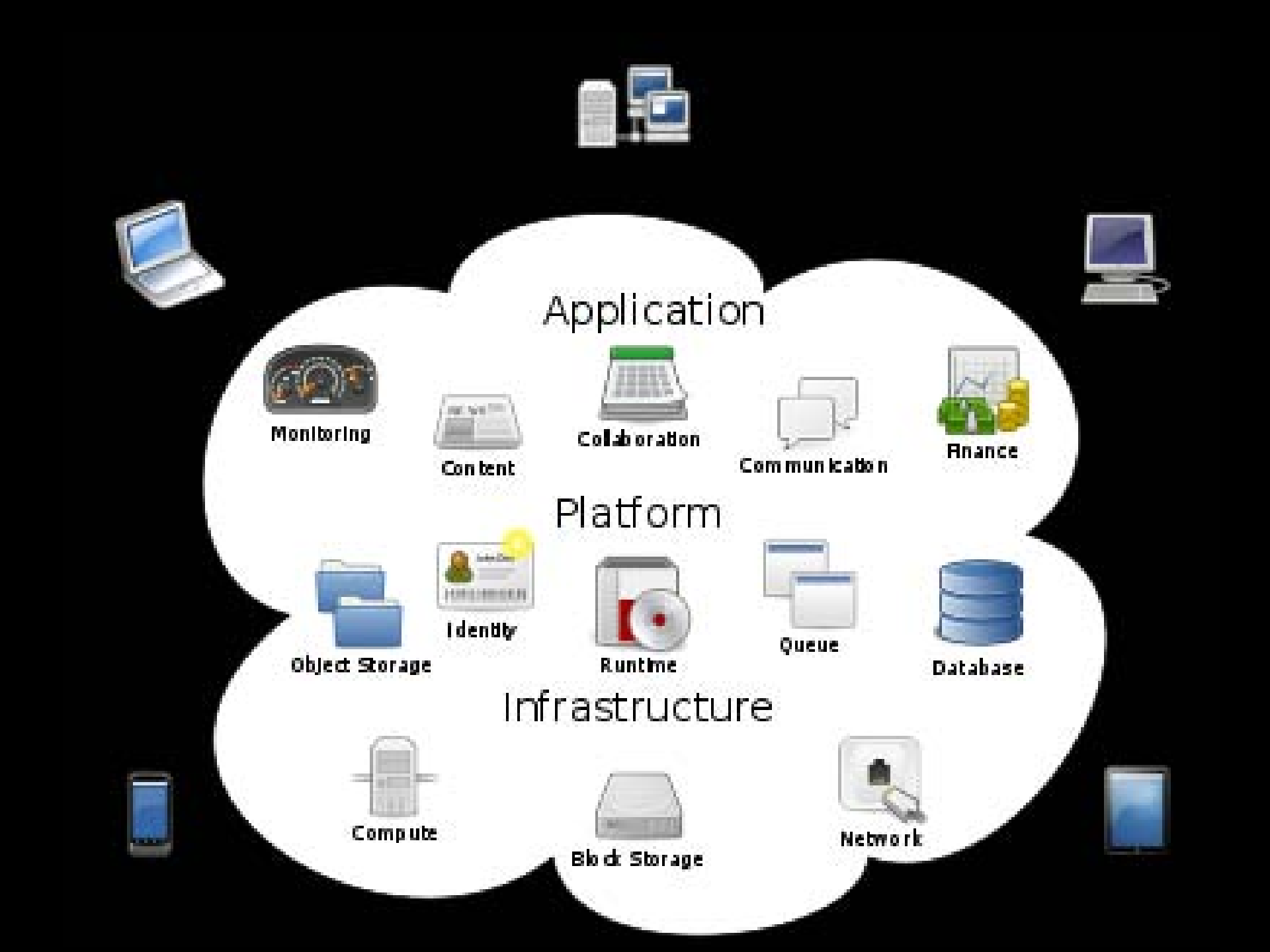
As shown earlier, the internet has provided many with the ability to distribute electronically published material that can be viewed on a computer screen or printed.

With the proliferation of e-books has come a wide diversity of formats and formatting issues.

Reader	E-Book Formats
Amazon Kindle, Kindle Fire (color), Kindle Touch, Kindle Touch 3G[48]	AZW, PDF, TXT, non-DRM MOBI, PRC
Nook Simple Touch,[49] Nook Tablet	EPUB, PDF
Apple iPad[50]	EPUB, PDF
Sony Reader PRS-350, PRS-650, PRS-950[48]	EPUB, PDF, TXT, RTF, DOC, BBeB
Kobo eReader, Kobo Touch, Kobo Vox[51][52]	EPUB, PDF, TXT, RTF, HTML

Cloud Computing

- **Cloud/Online Storage**
  - Large capacity, continual backups, enhanced security, multiple storage sites
    - Examples: Google Drive, iCloud, Drop Box, Amazon C3…
- **Shared accessibility**
  - Share access to files
  - Collaboratively produce and edit files.
    - Examples: Google Docs…
- **Virtual Desktops**
  - Access your software & applications from anywhere on (nearly) any computer.
  - Hosted services accounted for more than 500,000 desktop units as of March 2009, but will grow to 49 million desktop units by 2013, and may make up as much as 40% of the worldwide "professional PC market" by revenue.


Application
Monitoring
Content
Collaboration
Communication
Finance
Platform
Identity
Object Storage
Runtime
Queue
Database
Infrastructure
Compute
Block Storage
Network

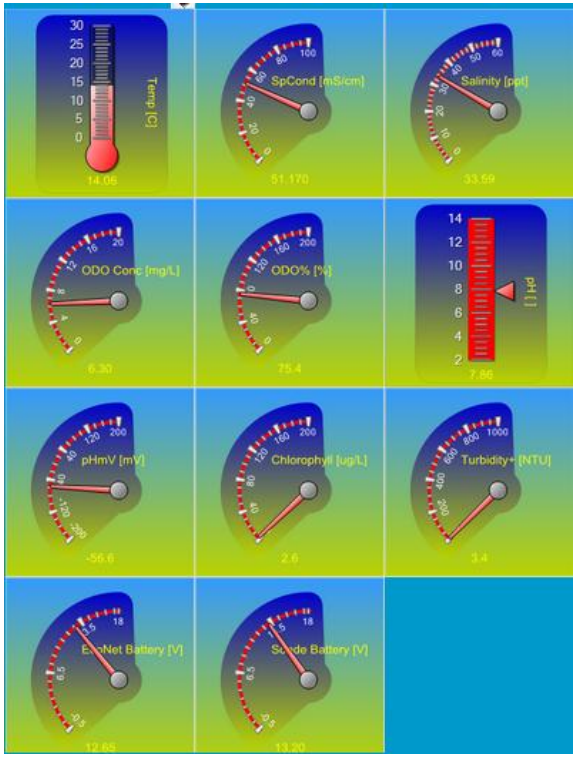
Displaying Data

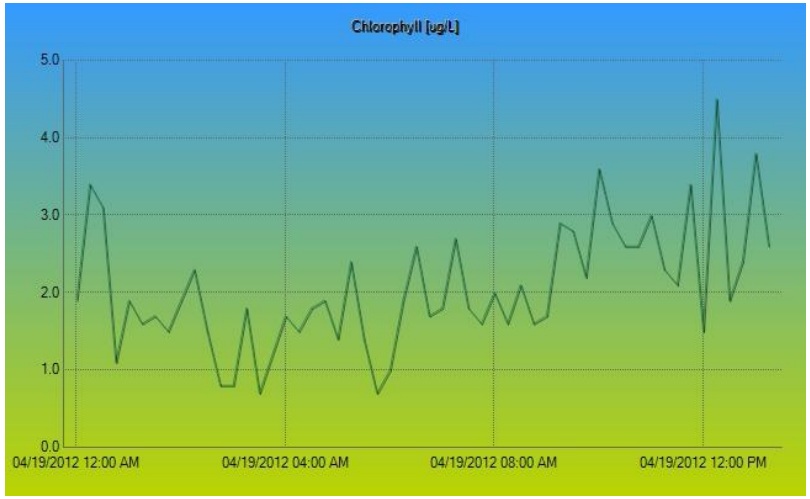
Real Time Data Collection and Display

YSI EcoNet
Web-enabled Remote Monitoring and Control

www.ysieconet.com/

www.ysieconet.com/public/WebUI/Default.aspx?hidCustomerID=208

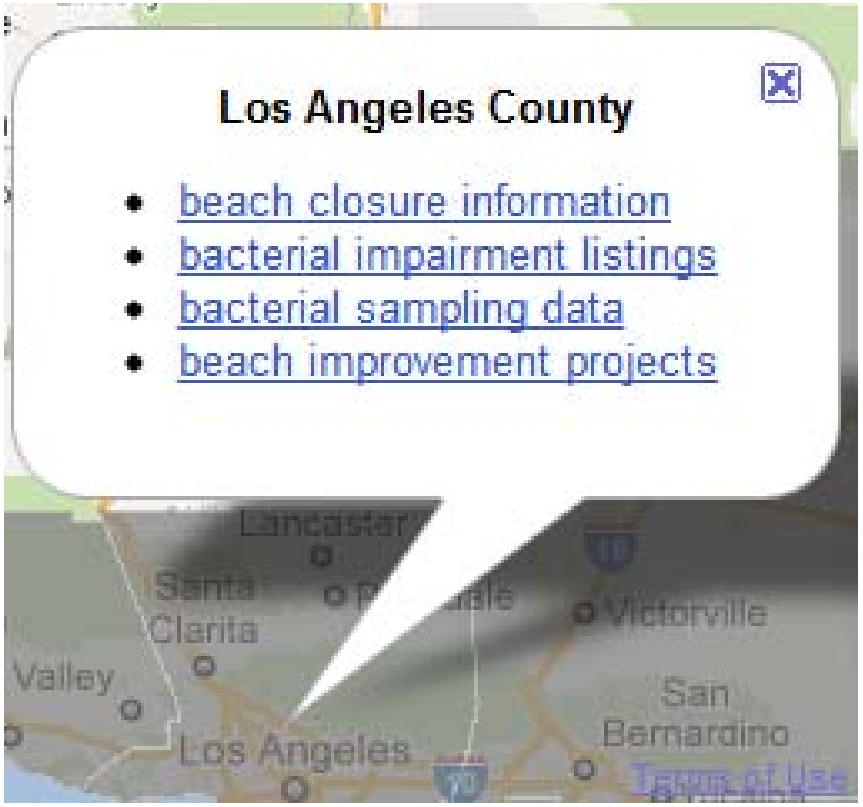




Local Time	Value
04/19/2012 01:15 PM	2.6
04/19/2012 01:00 PM	3.8
04/19/2012 12:45 PM	2.4
04/19/2012 12:30 PM	1.9
04/19/2012 12:15 PM	4.5
04/19/2012 12:00 PM	1.5
04/19/2012 11:45 AM	3.4
04/19/2012 11:30 AM	2.1
04/19/2012 11:15 AM	2.3
04/19/2012 11:00 AM	3.0
04/19/2012 10:45 AM	2.6
04/19/2012 10:30 AM	2.6
04/19/2012 10:15 AM	2.9
04/19/2012 10:00 AM	3.6
04/19/2012 09:45 AM	2.2
04/19/2012 09:30 AM	2.8
04/19/2012 09:15 AM	2.9
04/19/2012 09:00 AM	1.7
04/19/2012 08:45 AM	1.6
04/19/2012 08:30 AM	2.1

Previous Next

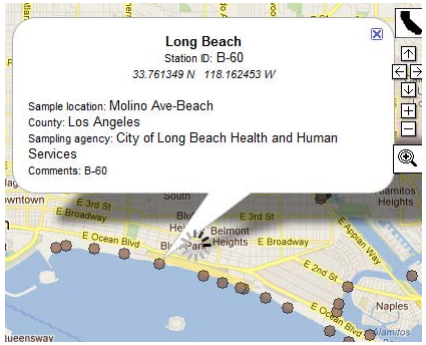
CA Water Quality Portal



QUESTIONS ANSWERED

- Can I swim at my beach, lake, or stream?
- How clean was my beach, lake, or stream during the past week or month?
- What are the long-term trends at my beach, lake, or stream?
- Which beaches, lakes, and streams are currently closed by county health agencies?
- Which beaches, lakes, and streams are listed by the State as impaired?
- Are the problems getting better?

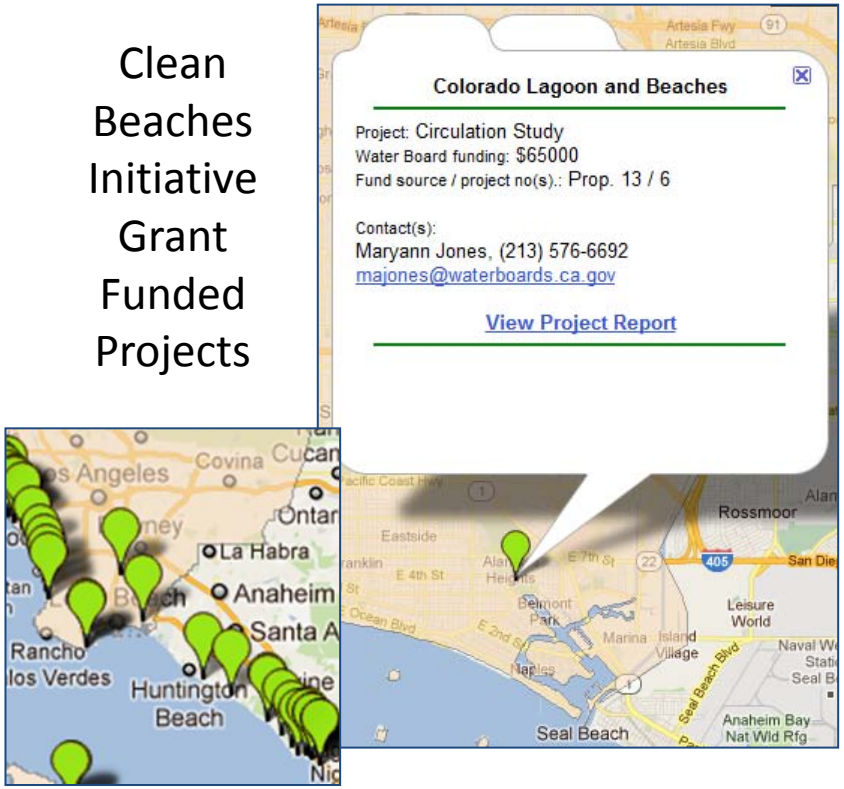
Safe to Swim Data



Beach Monitoring Stations

303(d) listed waterbodies – FIB's

Clean Beaches Initiative Grant Funded Projects



Data Sharing

Data can be made useable beyond our own program ‘s use, through integrated data sharing efforts.

EPA's WQX

The Water Quality Exchange (WQX) is a new framework that makes it easier for States, Tribes, and others to submit and share water quality monitoring data over the Internet. States, Tribes and other organizations can now submit data directly to the publicly-accessible STORET Data Warehouse using the WQX framework. The STORET Data Warehouse will continue to be the repository for all modern STORET data and will now also be the new home for data submitted through WQX. WQX will eventually replace the distributed STORET Database (including the STORET Data Entry Module, Reports Module, and STORET Import Module or SIM) as the primary means of submitting water quality monitoring data to EPA.

www.epa.gov/storet/wqx/index.html

California Environmental Data Exchange Network

California Environmental Data Exchange Network

CEDEN is a system designed to facilitate integration and sharing of data collected by many different participants. It is a growing statewide cooperative effort of various groups involved in the water and environmental resources of the State of California. This network is open to federal, state, county and private organizations interested in sharing data throughout the state. The purpose of the CEDEN network is to allow the exchange and integration of water and environmental data between groups and to make it accessible to the public.

http://ceden.org/

Simple Data Sharing- AIS/Wildlife

CitiSci- CitSci.org supports the data management needs of citizen science projects from small-scale local efforts to national campaigns. Their tools allow any individual or organization to conduct their own research online.

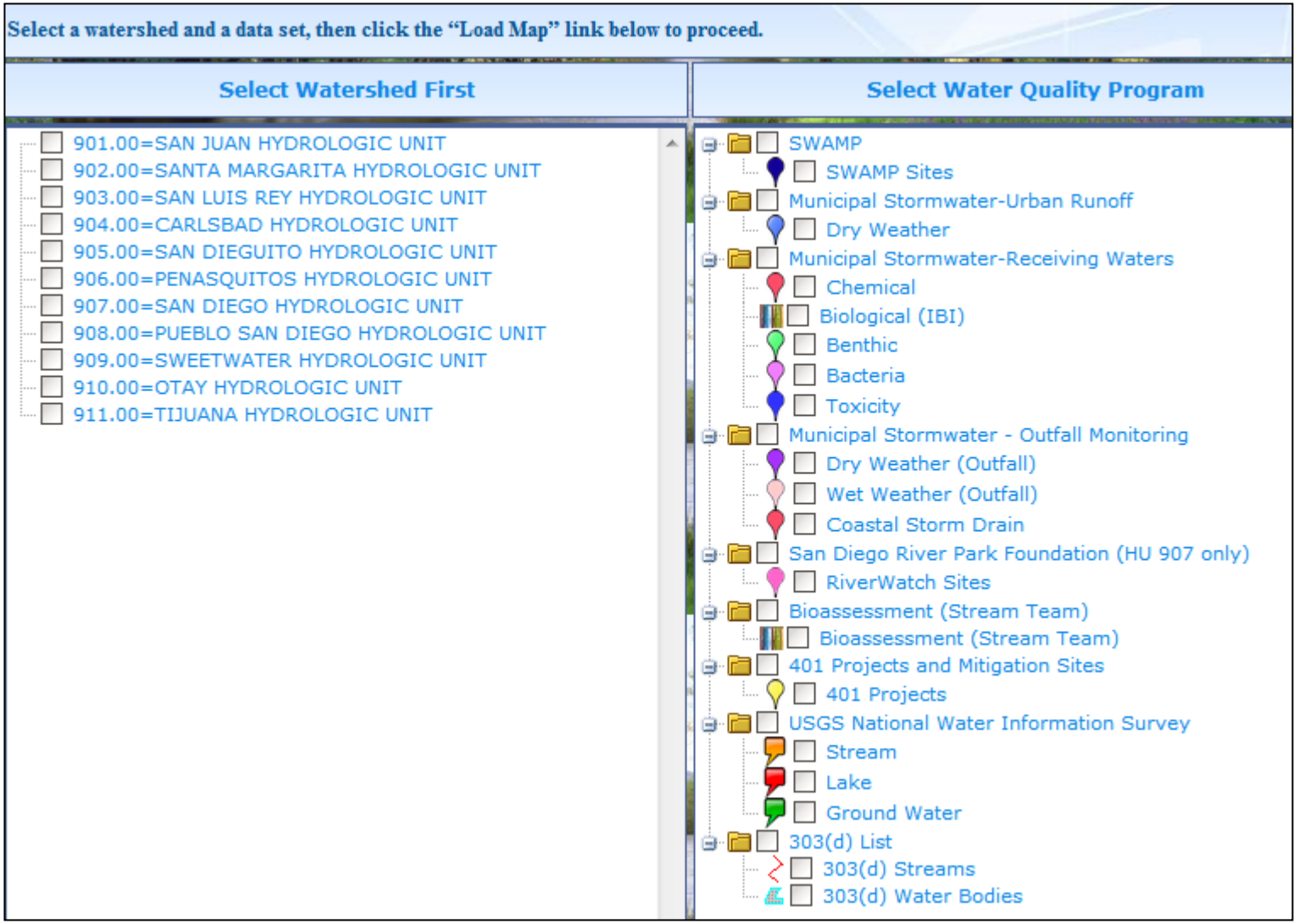
Sharing & Transforming Data

Transforming Data to Information – Making data into actionable information.

Examples-

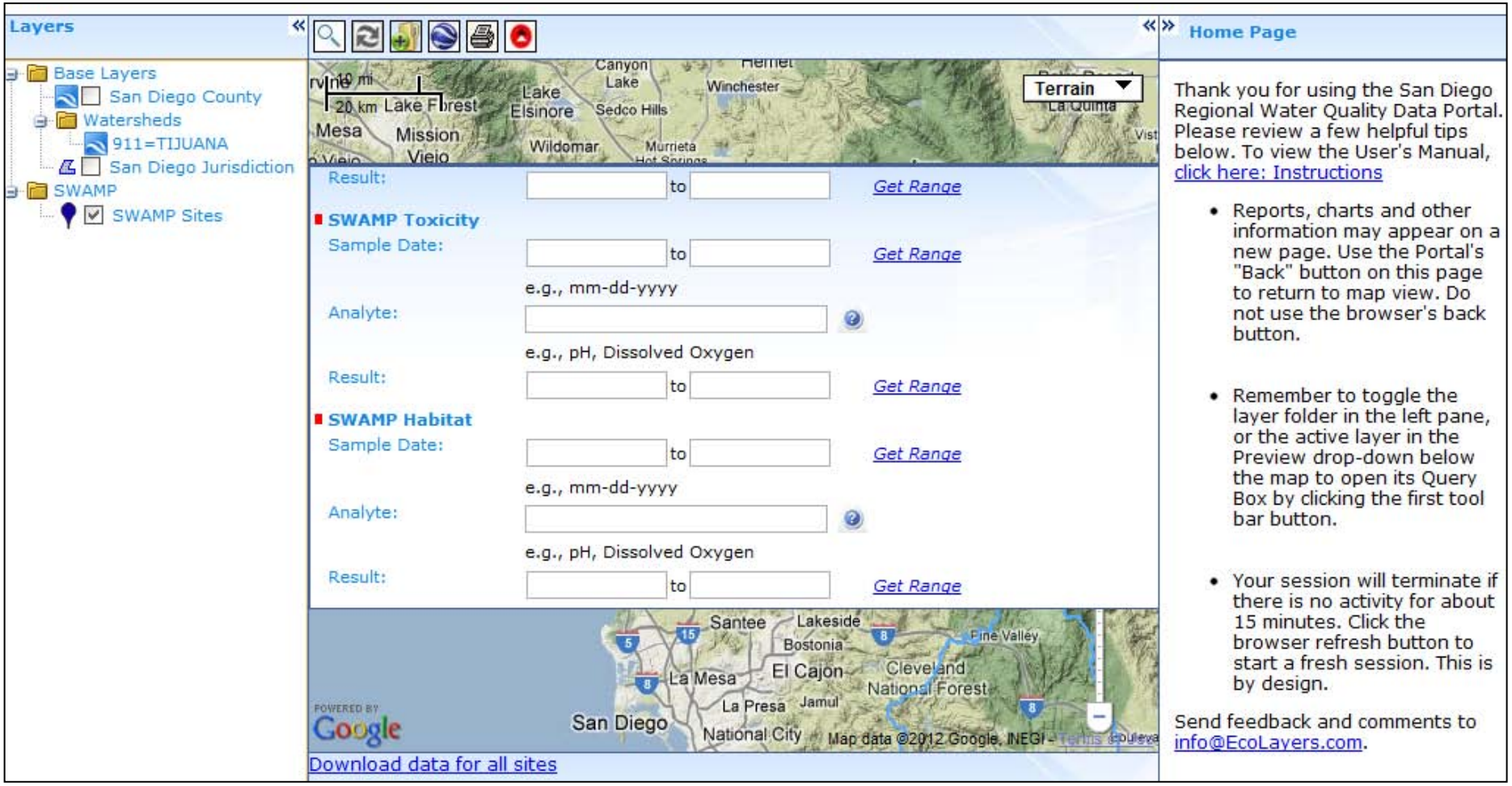
- EcoLayers – SDRP & SDRWQCB
- Yuba Shed
- Miocean Beach Information Monitors
- San Luis Obispo Beach Status

San Diego Regional Water Quality Portal 1/2



http://www.ca-watersheds.org/reg9-public/

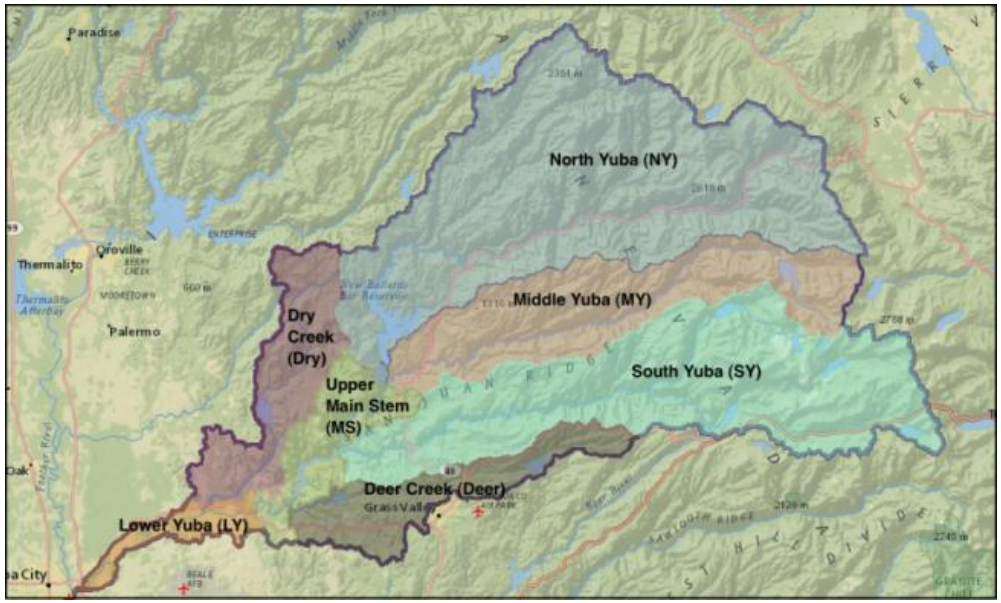
Search Regional Water Quality Data



Yuba Shed 1/2

Navigation

- Home
- Data
- Maps
- Bibliography
- Photos
- Assessment
- Cooperators
- Contact



This information system provides data, documents, photos, maps and tools for people interested in the condition of the Yuba River and its many tributaries. Yuba Shed has been designed to facilitate collaborative work among organizations, and to promote a science-based understanding of the Yuba River and the entire Yuba River watershed. http://yubashed.org/

Data

Category

- Algae
- Benthic Macroinvertebrates
- Thermograph
- WQ Field
- WQ Lab

Organization

- SSI
- SYRCL

Region

- Deer Creek
- Dry Creek
- Lower Yuba
- Middle Yuba
- North Yuba
- South Yuba
- Upper Main Stem
- Yuba Watershed

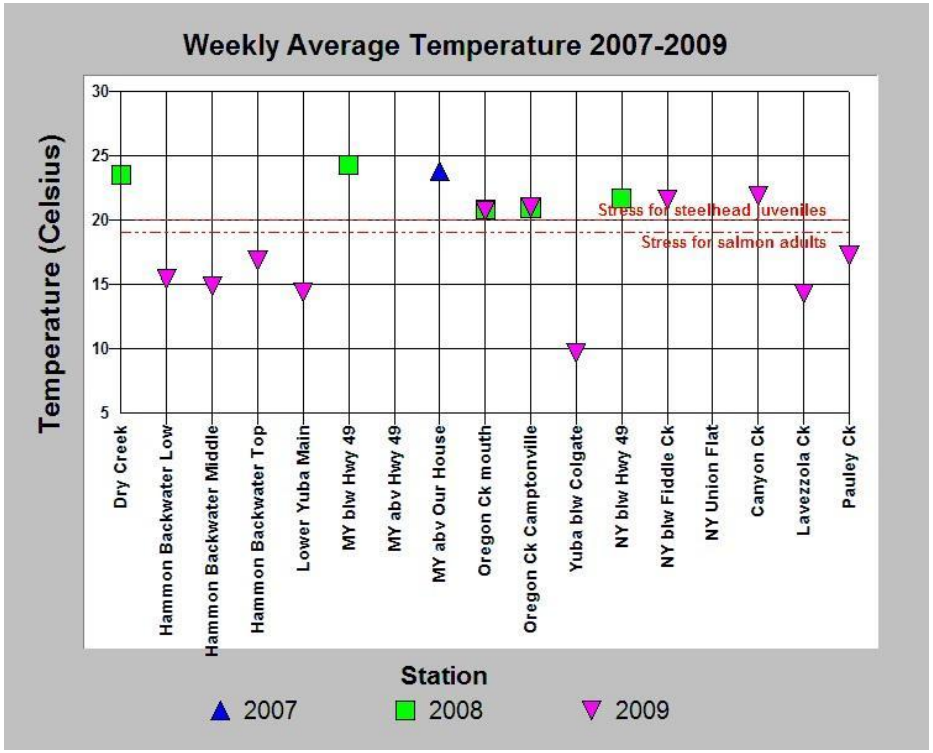
Parameter

- Air Temp
- Arsenic
- Chromium
- Coliform
- Conductivity
- Copper
- Diesel
- Dissolved Oxygen

Items per page

30

Reset



Miocean Beach Information Monitors

Miocean Beach Information Monitors

In 2010, Miocean launched the nation's first Beach Information Monitors in Orange county, featuring real-time beach and surf conditions, water quality data, and consumer tips for reducing urban runoff pollution to local beachgoers.

San Luis Obispo Beach Status 1/3

Data for Each Beach is Displayed

Avila Beach (AB8)

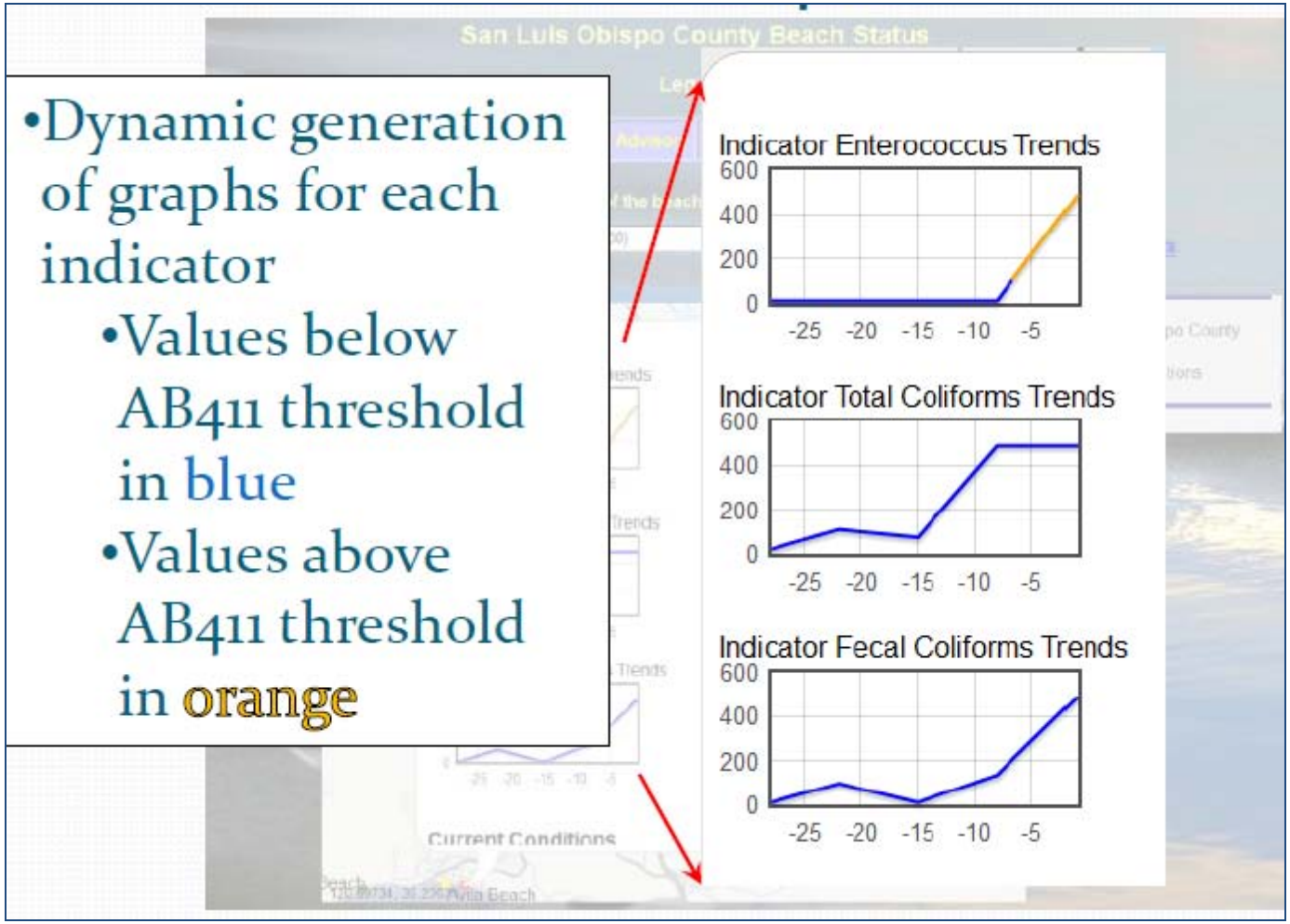
249 yds east of pier by last steps on rock wall-San Luis St
AB8(Lat= 35.178 , Lon= -120.733)

Currently Closed

Last 30 days of data

Sample Date	Enterococcus	Fecal Coliforms	Total Coliforms
8/2/2011	10	10	20
8/8/2011	10	97	109
8/15/2011	10	10	73
8/22/2011	10	135	487
8/29/2011	487	487	487

Indicator Trend Graphics



Dynamic Data from Near Shore Buoy

Online Statistics Resources

Sections of the *StatPages.net* web site

Interactive Stats	Free Software	Books & Manuals	Demo's & Tutorials	Other Links	About this Website	What's New	My Home Page

Web Pages that Perform Statistical Calculations!

(StatPages.org)

= Practical Stats

. . . Make sense of your data!

http://practicalstats.com/

www.r-project.org/

R is a language and environment for statistical computing and graphics. It is a GNU project which is similar to the S language and environment which was developed at Bell Laboratories (formerly AT&T, now Lucent Technologies) by John Chambers and colleagues. R can be considered as a different implementation of S. There are some important differences, but much code written for S runs unaltered under R.

Online Graph Resources

www.onlinecharttool.com/

www.diychart.com/

www.chartgo.com/

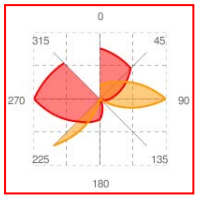
http://webgraphing.com/

http://nces.ed.gov/nceskids/createagraph/

http://piecolor.com/

www.mathcracker.com/pie_chart.php

www.richchartlive.com/RichChartLive/



http://charts.hohli.com

Monitoring Directories

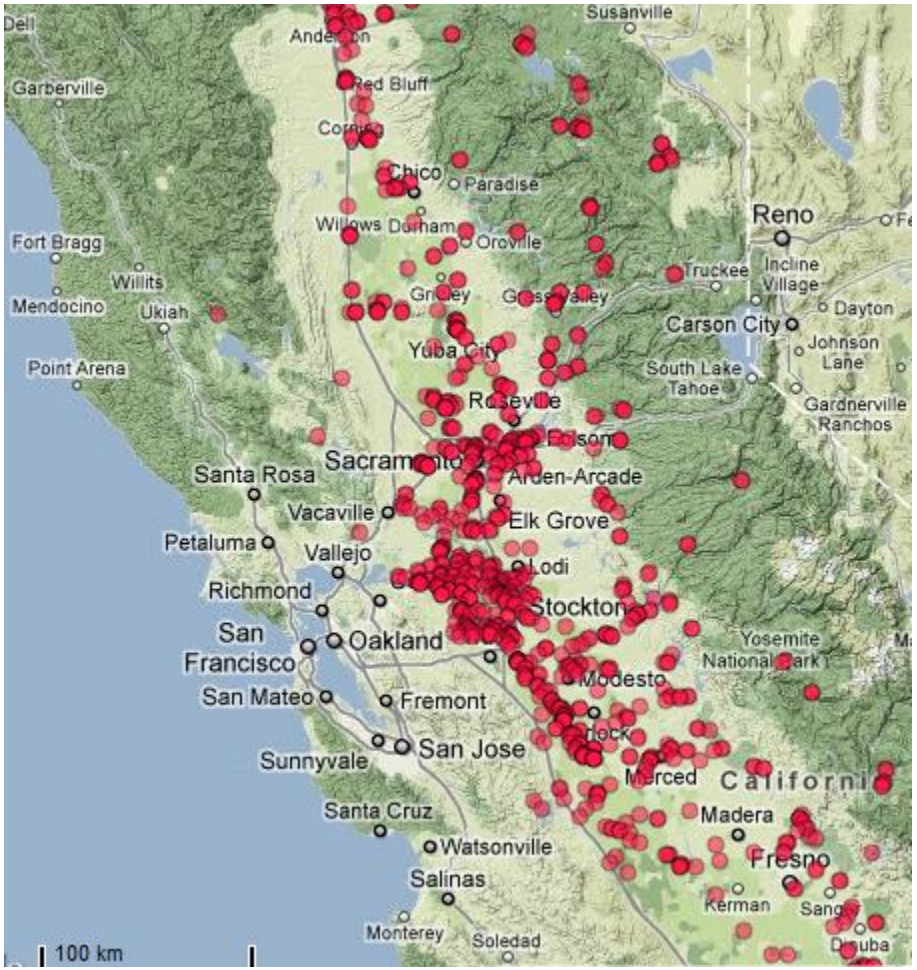
Directories of programs and projects can promote water quality monitoring, reduce redundancy, increase collaborations and reduce costs.

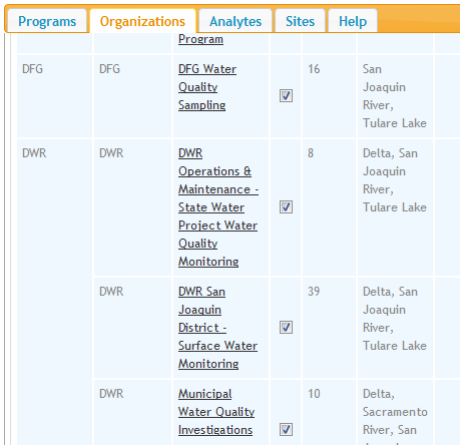
Central Valley Monitoring Directory 1/2

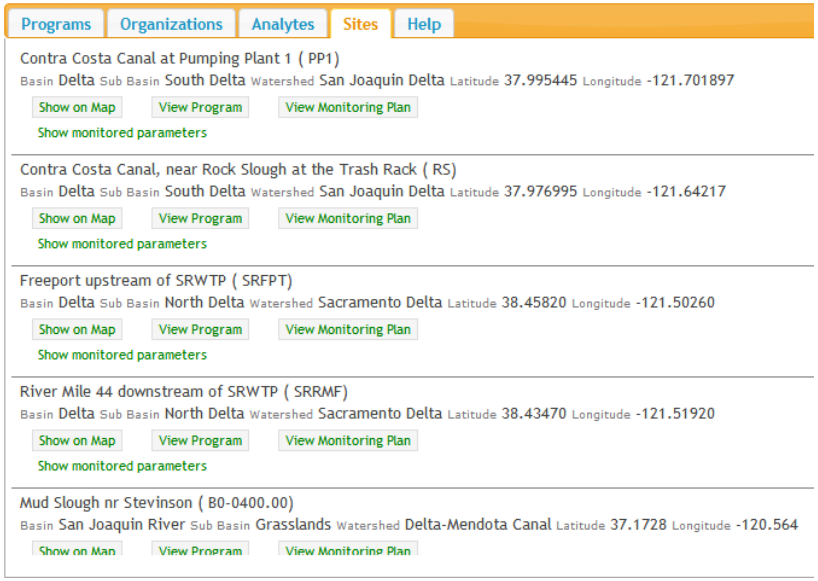
The Central Valley Monitoring Directory provides **access to program and metadata for current water quality monitoring efforts** in the Central Valley watershed.

The directory has been developed to **help improve the coordination and integration of existing monitoring efforts**. Monitoring information is accessed through an interactive map and forms. Links to actual water quality data (hosted elsewhere) have been provided when available.

C.V.M. Main Directory





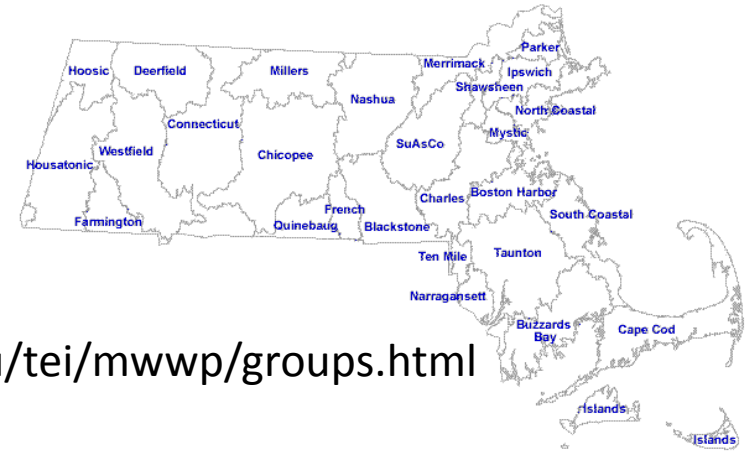


CA Citizen Monitoring Directory & Map

Massachusetts Water Watch Partnership

DIRECTORY OF MASSACHUSETTS VOLUNTEER MONITORING GROUPS

Click on the name of the watershed you are interested in to see who is monitoring there.
If your group isn't listed or there is an error in the listing, please contact MassWWP.



www.umass.edu/tei/mwwp/groups.html

Housatonic River Watershed

Housatonic Valley Association
Water Bodies Monitored: Housatonic River
Program Coordinator: Dennis Regan (413) 394-9796

Lake Onota Preservation Association
Water Bodies Monitored: Lake Onota
Program Coordinator: Bob Race (413) 443-1681

Laurel Lake Preservation Association, Inc.
Water Bodies Monitored: Laurel Lake
Program Coordinator: Mark Alimansky (781) 861-8420

Three Mile Pond Association
Water Bodies Monitored: Three Mile Pond
Program Coordinator: Elaine B. Panitz (413) 229-3390

Indiana Water Monitoring Council

Maximizing resources through improved communication, coordination, data sharing, and collaboration

Indiana Water Monitoring Council

www.inwmc.org/

Online Polls

Online polling has enabled groups to schedule monitoring and restoration events, survey communities about water quality , water uses & BMPs.

- Doodle Poll (Scheduling meetings, events…)
- Constant Contact (Citizen Monitoring Survey- see NWMC Presentation on CA Citizen Monitoring Contributions, AIS SWAMP Survey…).
- Survey Monkey
- Google Forms

Volunteer Management

National Value of Volunteer Time

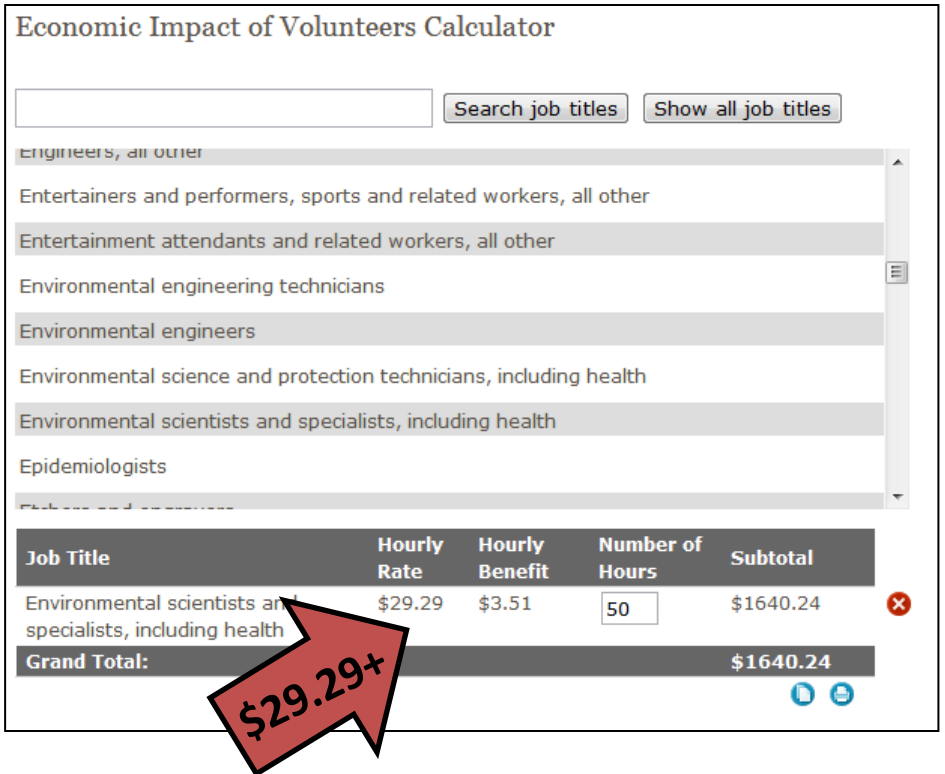
The estimated value of volunteer time for 2011 is $21.79 per hour.

Tracking volunteer hours-
Free and Fee based services

- www.volgistics.com/
- www.ourvolts.com
- www.presidentialserviceawards.gov/index.cfm

Economic Impact of Volunteers Calculator

www.handsonnetwork.org/tools/volunteercalculator



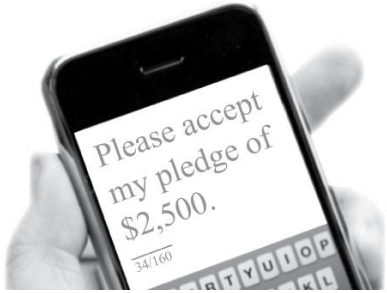
Online Fund Raising Tools

Widgets

Add a **Donation Button** to your Website and Social Media.

QR Codes

Be sure to have an online Wish List .



Text to Pledge/Give

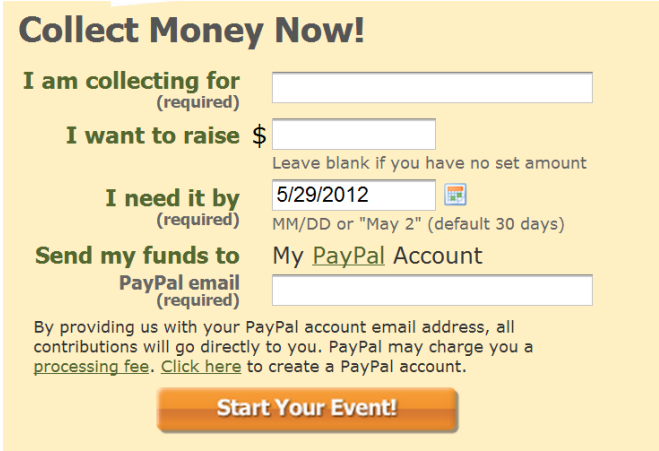
Online Fund Raising

Online Fund Raising Campaigns-

Many service providers exist.

Use your website and social media to promote campaigns.

chipin™



Razoo
Come Together • Change Your World

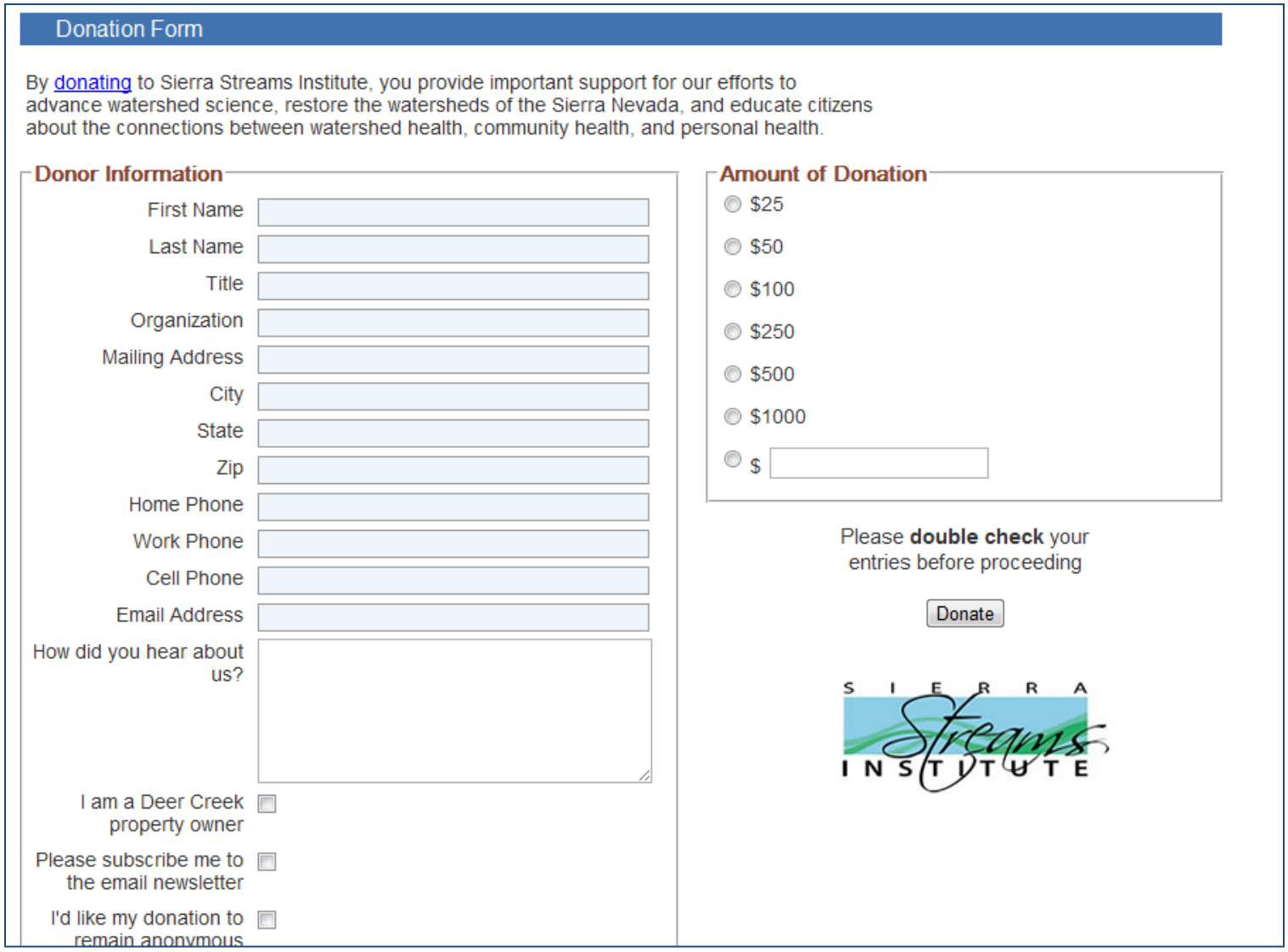
Donors Choose
For Classrooms

firstgiving

crowdrise™
Personal Fundraising & Promotions

Add A Donation Button to Your Website(s)

eDonation Forms



Donation Form

By donating to Sierra Streams Institute, you provide important support for our efforts to advance watershed science, restore the watersheds of the Sierra Nevada, and educate citizens about the connections between watershed health, community health, and personal health.

Donor Information

First Name
Last Name
Title
Organization
Mailing Address
City
State
Zip
Home Phone
Work Phone
Cell Phone
Email Address
How did you hear about us?

I am a Deer Creek property owner
Please subscribe me to the email newsletter
I'd like my donation to remain anonymous

Amount of Donation

$25
$50
$100
$250
$500
$1000
$

Please **double check** your entries before proceeding

Donate

SIERRA Streams INSTITUTE

Giving Via eBay
&
Using Wish Lists

http://sandiegoriver.org/donate.php

WISH LIST

Needs identified by other volunteers

Gardens

Gloves (50) ($5 each)

Kid-sized Gloves (20) ($4 each)

Round Point Shovels (10) ($15 each)

Used garden hoses: we cut them in 3 foot lengths and use them for tree supports

Used rakes, shovels, wheelbarrows and other garden equipment

Eagle Peak Preserve and Other Preserves

20 foot metal, weather tight storage container delivered (this is identified by staff!) ($1800)

Peterson Animal Tracks Field Guide (1) ($13.57)

Sibley Birds of Western North America Field Guide (1) ($13.57)

Healthy River, Healthy Communities

Small Digital Camera (2) to use in the field (water-proof or resistant prefered) ($100 each)

Garmin E-Trex GPS (3) ($120 each)

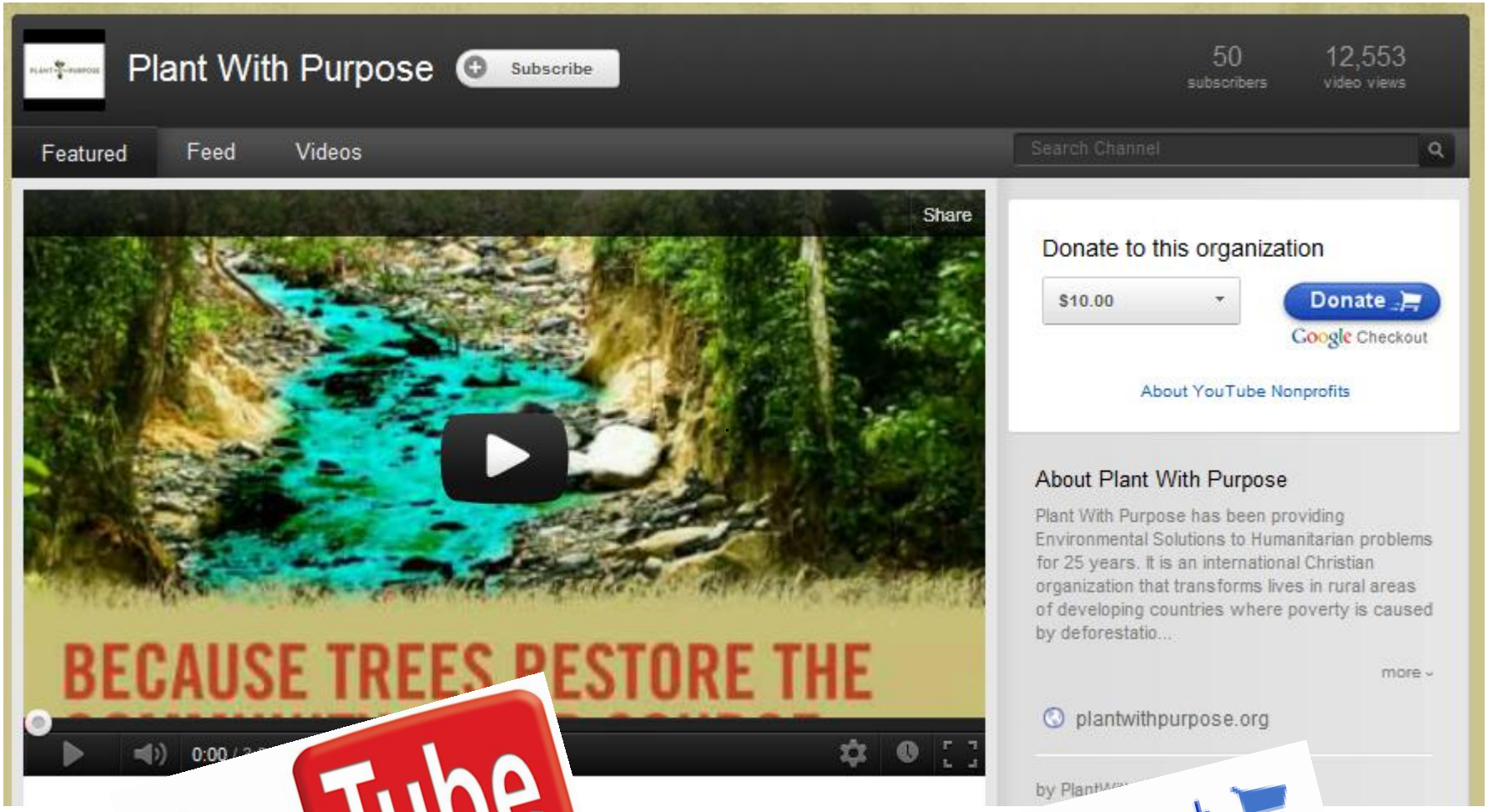
Hip Waders (various sizes) ($70 each)

Staff Wishes

Conference Room Phone (Bogen-VHUB) $350.00

http://sandiegoriver.org/wishes.php

Giving Via YouTube Channels



Useful Webinars Featuring Web-based Technologies Mentioned in this Presentation

October 21, 2010, **Using the California Data Exchange Network (CEDEN)**
https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=40708342&rKey=1b9972bb8a2bc92f

February 17, 2011 **Monitoring Directories- Demonstration of the Central Valley Monitoring Directory**
https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=41846362&rKey=3917b8dff9bbdc29

March 17, 2011 **Water Quality Monitoring Sensors**
https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=42203952&rKey=1201a4a35a26a3d7

May 16, 2011 **Application of the USGS SPARROW Model to Understand Nitrogen and Phosphorus Transport in California**
https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SPhttps://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=42775342&rKey=7686b58a16cb0977

June 16, 2011 **Introduction to the National Environmental Methods Index (NEMI)**
https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=43072417&rKey=ea78cd9f0401031c

September 15, 2011 **Integrated Watershed Management**
https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=44004922&rKey=938a850e1de785ba

April 12, 2012 **StreamStats: A streamflow web application**
www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/docs/webinar_a041212%20.pdf
https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=46050862&rKey=6312c77baf51f741

Thanks for Participating

***WATER:** One Resource – Shared Effort – Common Future*

8th National Monitoring Conference

April 30 - May 4, 2012 • Portland, Oregon